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An index to the eighty-fourth volume of THE RAILWAY GAZETTE *covering the issues from January 4 to June 28, 1946, has been prepared, and is now available free of charge on application to the publisher*

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IMPROVING LONDON'S TRANSPORT

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With a foreword by

The Rt. Hon. Lord Ashfield of Southwell

62 diagrams and maps, 97 photographs and folding plate

THE RAILWAY GAZETTE
33, TOTHILL STREET, WESTMINSTER, S.W.1.

Passenger "Cisterns" at Railway Terminals

ON Saturday, August 3, there was less passenger congestion at Paddington, Waterloo, and other London terminal stations than on the previous Saturday. This was due largely to prompt action by the G.W.R. Public Relations Officer, assisted by the daily press, in advising intending passengers not to arrive more than a hour before the advertised departure time of the train by which they intended to travel. We understand that the actual number of travellers handled at many stations has not varied one way or the other by more than a few hundreds compared with 1939. Station congestion at holiday periods, which became a feature of railway travel during, and has continued since, the war, is really attributable to the Ministry of Transport. During the war the public was warned by the Ministry that extra trains would not be run at holiday periods. This caused holiday-makers who were determined to travel despite the Ministry's warnings to arrive at stations many hours in advance in the hope of securing standing room, let alone seats. This practice, the need for which no longer exists, has had the effect of turning the circulating areas of large stations into "passenger cisterns," inflowing from street and tube and outflowing to the trains.

* * * *

Six Objections to Nationalisation

Of the many objections to the indiscriminate adoption of nationalisation as a policy applicable to basic industries, six were enunciated recently by Mr. Ralph Assheton, Conservative M.P. for the City of London and former Chairman of the Conservative Party. He maintained that nationalisation enhanced the power of politicians and bureaucrats and diminished personal rights and personal freedom; it had a record of failure and loss in many countries where it has been tried; it substituted inexperienced bureaucratic control for sound business management; it would ruin our chances of solving the problem of exports and thus would reduce the amount of food and raw materials which this country could purchase; it put an end to the free choice of the consumers and the workers and put them under an all-powerful master; and, finally, it was not a party backed by the majority of the electors. In making his last point, Mr. Assheton said that large numbers of those who voted Labour at the last General Election did not realise that they were voting for wholesale nationalisation of our industries. Spokesmen of the Labour Party have made great play with its "mandate" for nationalisation, but probably large sections of the electorate were influenced as much by election promises of speedy provision of houses, faster demobilisation, more and better food, improved relations with the Soviet Union, and more clothes for fewer coupons, than with the prospect of nationalising railways, the Bank of England, or the coal mines.

* * * *

Clarifying Statistics

The July issue of the *Monthly Digest of Statistics*, issued by the Central Statistical Office, includes for the first time a number of graphs dealing with such matters as manpower in Great Britain, production (including freight train traffic, coal, steel ingots and castings, merchant ships under construction, motor vehicles, and so forth), supplies for the home civilian market, the value of external trade, finance (Exchequer issues and receipts, currency circulation, bank clearings, and yield on 2½ per cent. Consols), and prices (cost of living index, wholesale prices, import and export prices, and agricultural prices). These graphs are a welcome addition to the bulletin, for they show at a glance, and in a form which cannot be approached for clarity, the indication of a trend. The detailed figures from which the graphs were compiled are necessary for a study of any of the matters dealt with, but for simplicity in presentation and as a ready means of indicating the broad position, the graphs have a great deal to commend them. It is a pity that the only graph dealing with railway matters is that relating to the tonnage of freight train traffic. From a transport viewpoint the inclusion of passenger and coal movements and receipts for all classes of traffics would be welcome, and if on this could be superimposed expenditure and net receipts, the picture would be instructive to many who at present seem singularly ill-informed of the profitability of railway operation.

Liverpool-Salford Bus Application Refused

An application to increase the frequency of bus services between Salford and Liverpool from one every two hours to one every hour was refused recently by the North-West Regional Traffic Commissioner. The application was made jointly by the Lancashire United Transport & Power Company and the Corporations of Leigh, St. Helens, and Salford, and was opposed by the L.M.S.R. It was stated at the hearing that the average journey time by train between Manchester and Liverpool was now 55 min., as against 40 min. before the war. On behalf of the railway company it was said that the demand on parts of the route might be met by applications for short-distance local bus services. The Commissioner refused the application as it stood, but intimated that he would grant the increase to a one-hour service between Tyldesley and Liverpool. At the same hearing the Commissioner granted applications from Cream (Lancs.) Limited for restoration on a pre-war basis, with no restriction on duplication, of express road services between Rochdale and Llandudno, and Rawtenstall and Llandudno, which were withdrawn when the company was turned on to war work in 1942.

* * * *

The Remote Control of Welding Current

It has long been a source of delay in welding shops that whenever an operator using a motor-generator set wished to alter the current, he was obliged to leave the job and walk back to the equipment to make the necessary adjustment. Perhaps even then a further slight adjustment would be necessary to enable entirely satisfactory welding to proceed. The operator would then be obliged to go again to the equipment to make the additional change; or (as frequently happened) he would not bother to do so, but merely contented himself with an attempt to manage with the first adjustment only. In many cases, for example in shipbuilding, boiler work, and structural engineering, the welder was often at a considerable distance from the equipment, and the delays and loss of production because of the need to make adjustments would then be correspondingly greater. Moreover, as is well known to those responsible for production programmes, one interruption can lead to another, so that a break to enable a single adjustment of welding current to be carried out can easily lead to further loss of time. The automatic regulator devised by Murex Welding Processes Limited, which we describe elsewhere in this issue, overcomes this difficulty entirely. Welding current is completely under the control of the operator at all times and is raised or lowered by a "code" of making and breaking short-circuits. The apparatus has the added advantage of being very simple to attach to an existing motor-generator set.

* * * *

Iraq Solves a W.D. Problem

Prior to VE-Day, there were 142 L.M.S.R. or Stanier-type 2-8-0 W.D. locomotives on the Persian railways, as recorded in an article entitled "British Work on Persian Railways," in our February 16, 1945, issue. Thereafter, the military authorities decided to send 93 of them to the Middle East, where they were urgently needed. Owing to shipping difficulties, the alternative of sending them overland to Baghdad —the nearest 4 ft. 8½ in. gauge railhead from which they could be worked on their own wheels to the Middle East generally —was considered. There were two ways of doing this: (1) Shipping them direct by barge from Basra up the Tigris, or (2) transporting them by rail over the Iraqi State Railways metre gauge main line if the size and weight of such large standard-gauge engines could be carried by metre gauge. Standard-gauge locomotives had already been shipped from Basra to Baghdad by barge, as described in an article entitled "Railways in Iraq, 1941-43" in our issue of May 10, 1946, but it was found that for so many urgently needed heavy locomotives sufficient suitable barges and tugs were not available, and that each trip would take at least 10 days under favourable conditions and considerably longer during the flood season. On the other hand, carriage by rail necessitated the removal of the boilers or wheels of the engines to bring the loads within the 9-ton permissible axle load, and facilities for dismantling standard-gauge engines at Basra and re-erecting them at Baghdad proved to be inadequate. Eventually, the Iraqi State Railways were asked if they would undertake to transport these engines fully erected to Baghdad, and the reply to this query is given in the article on page 150 in this issue.

* * * *

German-Owned Patents in Allied Countries

A conference under the Chairmanship of Sir Harold Saunders, Comptroller of Patents in the United Kingdom, was held in London towards the end of July, to consider the question of the future treatment of German-owned patents in allied countries. Delegates attended from Australia, Belgium, Canada, Czechoslovakia, Denmark, France, Luxembourg, Holland, Norway, South Africa, Great Britain, and the United States of America. There was complete unanimity that in no circumstances should any such patents within the territories of the Allied nations revert to the former German owners, and the difficulties inherent in deciding how rights of this kind in future shall be disposed of, were discussed. Representatives of France, Holland, the United Kingdom, and the United States have signed an accord under which all patents of former German ownership now controlled by the signatory Governments will be available within the respective territories to all nationals of the countries party to the accord, without payment of royalties or any requirement to manufacture within the country where the patent exists. Representatives of Australia, Canada, Czechoslovakia, and South Africa agreed to recommend that the accord should be signed on behalf of their respective Governments. Other members of the United Nations and neutral countries can become parties to the accord at any time until January next.

* * * *

Accidents on British Railways in 1945

In a subsequent issue we shall be dealing at greater length with the annual report of Lt.-Colonel Sir Alan Mount, the Chief Inspecting Officer of Railways, on accidents which occurred on the railways of Great Britain during last year, and of which a summary is given elsewhere. The number of passengers killed in train accidents during 1945 was 45, and train accidents of all kinds, resulting in more than three hours delay, numbered 363, of which 155 were caused by human failure and 133 by defective rolling stock, track, or apparatus. The liability to casualty among passengers was one killed in some 43,000,000 carried. The Chief Inspecting Officer states that the fatalities in train accidents, when analysed, afford no justification for thinking that the high standard of safety has been impaired; nor as regards the run of exceptional train accidents early this year is there any indication of some general and remediable cause. Moreover, the opportunities which gradually are becoming available for effecting improvements and bringing into use additional safeguards, should produce substantial results in the next few years.

* * * *

Excess Profits

Even a hundred years ago there were rumours that Parliament had a reproving eye on railway profits, and in its issue of August 8, 1846, *The Railway Times* referred in terms of indignant disbelief to the suggestion that a Parliamentary Commission, headed by a certain Mr. Morrison, might recommend that "the London & Birmingham Company should be called upon to disgorge some of their excess profits." This possibility had been alluded to at the first meeting, on August 7, 1846, of the London & North Western Railway Company. Mr. Morrison, according to *The Railway Times*, had acquired "a gratifying celebrity in discoveries of mare's nests," but the paper could not believe that he would hold himself up to ridicule by pursuing the course hinted at. *The Railway Times* had no fear of the public being injured if railway proprietors received a return of 10 per cent., provided fares were cheap, and since cheap fares sooner produced 10 per cent. profit than high ones, here was a complete answer to "those meddlers who wish further to interfere with the profits of railways." It is not recorded whether this Mr. Morrison was stung by newspaper criticism into proposing a new commission for inquiring into the conduct of the press!

The L.M.S. at War

THE London Midland & Scottish Railway has followed the lead of the Southern Railway by publishing an account of its wartime activities. The book issued from Euston is entitled "The L.M.S. at War,"* and has been written by Mr. George C. Nash. The task of unravelling a mass of railway facts and figures must have been a somewhat strange adventure for a contributor to *Punch*, but Mr. Nash has managed to give the gist of his voluminous material in fifteen brief chapters of prose which it is a pleasure to read. So much has been written already about the work of our railways during the war that some repetition was unavoidable in dealing with such subjects as the evacuation of civilians, air raid precautions, and bomb damage, but Mr. Nash brings a fresh touch to bear on hackneyed topics, and lightens his text with an apt quotation now and then, as when we are reminded that, in the words of *Punch*.

"Crewe is a fantasy of travellers' brains,
Born of the night of *Bradshaw* and of trains."

The first chapter describes the formation of the L.M.S.R. and gives a general idea of its great resources. The author goes so far as to claim that it is the greatest of all privately-owned railways. Now it so happens that the Pennsylvania Railroad, in the process of celebrating its centenary this year, maintains that it is the largest carrying concern in the world, pointing to its capital investment of $2,783,350,000, its 1944 operating revenue of $1,010,016,000, and its 10,680 route miles, over which it worked two and a half times the ton mileage of all the British railways put together. Certainly the size of everything about the Pennsylvania system is impressive. Its huge locomotives haul an average freight train load of 1,222 long tons, made up of wagons carrying 31 tons apiece. The electric locomotives are as imposing as the steam engines. The electrified area includes 2,667 miles of main-line track, with a continuous run of 226 miles from Washington to New York. When coal, oil, electricity, and other fuels are converted to a coal-tonnage basis, the quantity of fuel and power consumed by Pennsylvania locomotives in 1944 was over 15,900,000 tons. In this small country of ours, operations cannot be conducted on that scale.

Mr. Nash is on safer ground when he enlarges on the great share which the L.M.S.R. took in providing transport for the Services, and for the country generally, during the war years. Here are a few effective points, culled from a remarkable record. The L.M.S.R. in Glasgow alone handled (in and out) 3,000,000 service personnel in the period from 1939 to 1943. More than 10,000 "out-of-gauge" loads passed in 1943. To June, 1942, the company ran 760 special trains conveying 5,000,000 coils of barbed wire from a single factory in the north-west area. By VE-Day, May 8, 1945, the number of special trains of petrol was 27,043: on an average a train carried about 100,000 gallons.

Yet on the whole the railway movement required for the civil population and the factories was much greater. In spite of all appeals to the public not to travel, 2,598,600 journeys were made to the Blackpool district between May and September, 1943, as compared with 2,426,248 in the corresponding holiday season of 1938. At some provincial centres workmen's tickets increased by as much as 70 per cent. The heavy passenger traffic had to be handled in the midst of a constant flow of freight trains, which often moved over unusual routes. In 1943 the L.M.S.R. originated about 43 per cent. of all the loaded wagons forwarded by the railways. Mr. Nash regards ordinary freight operations as "largely uninteresting—just a matter of keeping wagon load after wagon load—millions and millions in a single year—on the move and filled to capacity." That surely is the problem which called train controls into being and will always be with us.

A chapter on "The Workshops" rehearses the orders carried out for the Government at Crewe, Derby, Horwich and elsewhere. Another chapter headed "Seaways and Airways" tells how the L.M.S.R. fleet fared and how the company's docks were used. It also reports that during the four years after June, 1940, the air companies associated with the railway companies operated 6,000,000 aircraft miles and conveyed 250,000 passengers. A miscellaneous chapter collects information about the supply of stores, catering, and research activities. It is surprising to learn that in the 14 hotels, which were not requisitioned, the number of visitors rose from 330,000 in 1938 to 580,000 in 1943. Something is said, too, about commercial business and publicity.

Next we hear about the great occasion of "D-Day," June 6, 1944, when the L.M.S.R. is reputed to have fulfilled its biggest contract of all. Tribute is then paid to L.M.S.R. men (and women), an odd 250,000 strong, and the book closes with a glimpse into the future, when the lag of new construction has to be overtaken and plans of improvement costing over £140,000,000 will be carried out.

This great story of achievement is printed in clear type on excellent paper, and is bound in white linen. The appearance of the book is enhanced by eight plates in colour, which came from the studio of Norman Wilkinson, O.B.E., P.R.I., and by numerous illustrations from photographs. Of Mr. Wilkinson's pictures, our own preference goes to one entitled "L.M.S. express bombed and machine gunned near Bletchley, October, 1940," and to a striking representation of "Blitz on an L.M.S. Marshalling Yard near Willesden, September, 1940," though we also admire the artist's nautical scenes of rescue work at St. Valery and of troop arrivals on the Clyde. The price of this handsome book is no more than 5s., and assuredly it deserves a wide circulation.

* * * *

Trade Union Rivalry

WE expressed concern in these columns some weeks ago at the difficulties which exist and may well develop in regard to trade union rivalry, and replies given to questions in the House of Commons on July 30 by Mr. Ness Edwards, Parliamentary Secretary to the Minister of Labour, do not alleviate this feeling. When asked whether he had reconsidered the case of the twelve L.P.T.B. tramwaymen who, while drawing their pay regularly, are not allowed by the Board to take out their tramcars because they are members of one union (the National Passenger Workers' Union) and not another (the Transport & General Workers' Union), he first referred his questioner to earlier replies on the matter. When his questioner enquired whether it was not an outrage that twelve men, one of whom is a V.C., should be denied the privilege of work merely because they prefer to be members of one union and not of another, the Parliamentary Secretary replied that the Ministry of Labour should not be expected to become the protector of a scab union.

This, we suggest, was an unfortunate phrase, as when pressed to say whether the Ministry had no plan whatever for ending this enforced idleness, he stated that the Minister had no powers, but that he would be assisted if Members helped him to obtain a little more discipline in industry among the unions—an unusual request, to say the least, from a Minister to an Opposition speaker. When pressed further as to whether it was the inalienable right of every Englishman who is dissatisfied with one union to join another, the Minister made the somewhat startling remark that it is an inalienable right on the part of the workers in industry to decide with whom they will work, and that men were perfectly entitled to withdraw their labour unless the other men concerned joined their particular union.

This view, if generally adopted, might have grave repercussions on an industry like that of the railways, where so many unions are concerned, and it would be interesting to know if the Minister would justify, say, the men belonging to the N.U.R. ceasing work until all the members of the A.S.L.E.F. joined the N.U.R.

In the case of the dispute at the G.W.R. Swindon Works between the N.U.R. and the National Union of Vehicle Builders, which has caused the complete cessation of building passenger coaches since January, the Parliamentary Secretary stated that because the dispute was between rival unions the matter was one of very great difficulty. The unions involved however, had agreed to submit the matter to the T.U.C. Disputes Committee.

As the facts of the dispute were reported to the Minister in March last, Mr. Ness Edwards' reply somewhat naturally provoked a question as to the necessity for some inquiry to

* "The L.M.S. at War," by George C. Nash (G.C.N. of *Punch*) Published by the London Midland & Scottish Railway, Euston. Price 5s.

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be made into the machinery for dealing with matters of this kind, and Mr. Peter Thorneycroft crystallised the point by asking whether there was not something seriously wrong with the machinery or with the Ministry of Labour if a ludicrous dispute of this kind could continue for six months when rolling stock was so urgently required. The Minister could only make the enigmatical reply that "men who feel keenly about their rights in industry, and whose feeling is dependent upon historical events, cannot be handled in quite that way."

The simple fact remains that, although it is immaterial to the G.W.R. who performs the desired work, this inter-union dispute has already prevented the construction of about 150 passenger coaches this year, and the length of the queues at Paddington on recent Saturdays will give some indication of how urgently the stock is needed.

* * * *

Railway Staff Returns

SINCE 1938 the Ministry of Transport has not published the customary annual return showing the number of staff employed by the railway companies of Great Britain, by the Railway Clearing House, and on the railway undertakings of the London Passenger Transport Board, during a selected week in March. These figures have continued to be taken, however, and, by the courtesy of the Minister, we were enabled to publish in our issue of October 20, 1939, some of the totals compiled for the week ended March 11, 1939, which were not made available elsewhere. Since that time, there has been no detailed official statement of the numbers of persons employed by the railway companies, although occasional mentions of total figures have shown that there has been an increase in total. In a table published in Colonel Sir Alan Mount's Accident Report for 1944, the number of persons employed by the railway companies at March 11, 1944, classified according to the nature of their employment, was included. These bore a close similarity to the pre-war official staff statistics, and, with its aid, we were able to prepare a comparative table, and to include this at page 524 of our issue of May 10, 1946. The Minister of Transport then supplied us with comparative figures at March 10, 1945, which we included in our issue of May 24 (page 581). On June 7, in response to a Question in Parliament, the Minister supplied a written answer setting out the numbers employed by each of the four main-line railways (see page 163 this week). A White Paper (summarised this week, page 162) now gives the results of a number of these staff censuses, dividing the figures in various ways according to nature of employment or sex. We have obtained from the Ministry of Transport the following table showing how the 1945 total is divided among the various railway and other employees:—

	At March 10, 1945
G.W.R.	112,102
L.N.E.R.	183,915
L.M.S.R.	233,855
S.R.	67,570
Cheshire Lines	2,794
L.P.T.B.	15,926
M. & G.N. Joint	1,342
Railway Clearing House	833
Other companies	4,032
	622,369

* * * *

Railways and the Public

IT has been suggested in certain quarters that since the railways have been faced with the threat of nationalisation, they have been less zealous in the public service than otherwise they would have been. Such a suggestion betrays a complete lack of appreciation of the progress which the railways have made since the cessation of hostilities in their endeavours, first to restore, and then to improve on, their pre-war facilities, and of the difficulties which prevent more rapid progress.

The critics fail completely to realise how greatly the normal maintenance work of the railways had to be curtailed during the war. The White Paper (Cmd. 6797) issued in April, 1946, showed that the arrears of maintenance at December 31, 1945, on the four main lines were estimated at £116 millions at current prices. It should be clear to anyone that the carrying out of work involving such a huge expenditure, concurrently with the normal maintenance work, necessarily would occupy some years, even assuming that adequate supplies of labour and materials were available. In fact, both suitable labour and materials are still in very short supply.

The restoration of pre-war train services depends mainly on the condition of the track; an adequate supply of locomotives and carriages, and suitable coal supplies. So far as track maintenance is concerned, the shortage of rail chairs has necessitated the postponement of a good deal of essential relaying work, and, in turn, this has retarded desirable accelerations. This shortage was overcome gradually, but was followed by a serious shortage of sleepers; now it is understood that the supply of rails is likely to fall very short of requirements.

With regard to locomotives and carriages, apart from the fact that the stock is appreciably lower than pre-war, the number under and awaiting repair is greatly in excess of pre-war, and, despite every effort, the railways are still very short of the additional skilled labour which they require for their workshops. The quality of locomotive coal is decidedly inferior to pre-war, and affects adversely the timekeeping of trains.

The criticisms of the railways doubtless arise largely because of the queues which have been seen at the main London termini on recent Saturdays. It should not be overlooked, however, that even in pre-war days it was necessary for queues to form at the stations at Bank Holiday periods, and particularly on Saturdays at the height of the holiday season, because passengers arrived in such numbers that it was physically impossible to load and despatch trains at a rate commensurate with the abnormal rush. Small wonder that there were queues at the G.W.R. and Southern Railway London termini on Saturday, July 27, for on that day between 35 and 40 per cent. more passengers were conveyed than on the comparable pre-war Saturday, and, in the case of the former line, 10 per cent. less stock was available than before the war!

On the general accusation that the railways are becoming less zealous, the fact is that they have been making strenuous efforts to return to normal at the earliest moment, irrespective of the question of their future ownership. The removal of blackout and reinstatement of normal lighting was their first task; then the cleaning and repainting of stations was put in hand so far as the very limited supplies of paint, etc., permitted. A considerable increase in number and speed of the passenger train services already has been effected, and they are now about 15 per cent. better than last year. A further approach towards the pre-war level is planned for the winter timetable which comes into operation in October next, and still more mileage is planned for 1947, provided adequate supplies of locomotive coal can be secured.

In this connection the G.W.R. has made considerable progress with the conversion of locomotives from coal to oil burning and with the establishment of the necessary oil storage plants—for reasons of prudence and not of pessimism (as suggested in some quarters). More sleeping cars are being run; restaurant cars have been reintroduced and are gradually being increased as the cars are released from wartime work and renovated, and slip coaches have been restored on the G.W.R. Marked improvements have been effected in the general standard of timekeeping, and a fairly wide range of cheap fares was introduced on August 1, which will be extended as additional rolling stock becomes available. The rolling stock position prevents the immediate restoration of seat reservations, but it may be possible to recommence this welcome facility to a limited degree in the autumn.

In connection with the movement of freight traffic, train services have been greatly accelerated, zonal schemes introduced to expedite the collection, delivery, and transport of small consignments, cartage services have been increased, and extensions made in railhead and country lorry services.

As the railway companies' steamships have been de-requisitioned, they have been given a speedy refit which has enabled the steamboat services to the Continent, Channel Islands, and Ireland to be recommenced or greatly augmented. Railway hotels and catering services generally are being steadily improved, although so far it has proved impossible to obtain sufficient staff or adequate supplies of materials required for refurnishing and re-equipping them.

So far as major work schemes such as the remodelling of stations and provision of new hotels, are concerned, the neces-

sary plans have been prepared, but little progress can be made with such heavy tasks at present because of circumstances over which the companies have no control. But, we suggest, the railways can claim fairly that, against a background of shortage of men and a recurrent shortage of essential materials, they have made notable progress towards the re-establishment of their pre-war standard of efficient service to the public.

* * * *

Conversion of Coal to Oil-Burning Plant

TWO important steps to encourage the use of fuel oil in industry to replace coal were made known on August 1. The Chancellor of the Exchequer announced in the House of Commons that he proposes to remove the 1d. a gallon import duty on heavy fuel and gas oils in the next Budget, and from October 1 to pay a subsidy of £1 a ton to United Kingdom consumers of such oil. This, Mr. Dalton suggested, would afford appreciable relief against the high operating cost of oil-burning plant as compared with coal-burning plant, and, he hoped, would result in the maximum possible conversions.

Subsequently the Minister of Fuel & Power announced that he was making special arrangements to facilitate the speedy conversions of suitable industrial coal-burning plants to the use of oil fuel where this could be done with advantage. He also indicated that every assistance would be given to industrialists desiring to make the proposed change, and that arrangements had been made for ordering in bulk the necessary equipment and oil-burning appliances so that the change may be made as quickly as possible. Discussions, he added, are proceeding with the gas and electricity industries, as well as with the railway companies.

It might be difficult, for various reasons, for the railway companies speedily to adapt their stationary plants from coal to oil burning, but if the expected coal production makes it essential that the railway companies should reduce coal consumption, this will presumably have to be done by a fairly large-scale conversion of locomotives from coal to oil firing. Should this prove to be necessary, the work already carried out by the G.W.R. on the alteration of engines and the provision of storage installations, etc., will prove of the utmost value to the railways generally. Without indulging in any political views it seems tragic that the British coal industry should have reached such a level as to make such conversions necessary, and, although the Minister refers to "temporary" conversions, there is little doubt many will be permanent.

The proposed change-over is all the more serious when it is realised that a comparatively small increase in the number of man-shifts worked in the mining industry and the average output per man-shift—both of which are very considerably below the pre-war level—would provide all the additional coal required and leave a substantial margin for export, as can be seen from the figures published by the Central Statistical Office in its *Monthly Digest of Statistics* for July, 1946.

"Steady On, Old Girl!"

THOSE who are present at official inquiries into railway accidents can hardly expect to derive pleasure from them, for they are not usually joyful occasions. But there must have been at least two moments of real pleasure during the course of the inquiry into the accident at Hatfield on July 15 when the 7.5 p.m. Kings Cross to Aberdeen train left the track and crashed. By the sort of miracle which does sometimes happen, nobody was killed. That was a matter for relief, not for pleasure; but there was pleasure in the inquiry none the less.

There were, to begin with, the two schoolboys who happened to be engaged at that moment in the very right and proper occupation for boys of sitting on a fence, collecting engine numbers. Stands England where she did? Yes, indeed; and those two boys are part of the evidence, for they were doing what right-minded boys ought to be doing on a summer's evening, and what you can see them doing any day on any sizeable station on any main line in Great Britain, collecting engine numbers with much noise and enthusiasm. Their equipment is very simple: a pencil and a knife to sharpen it, a few scraps of paper, a copy of "Locomotives of the L.N.E.R." (which an enterprising publisher provides, together with companion booklets for the other railways, and of which he sells many thousands of copies to just such boys as these two), and a few friends to talk to. Thus equipped they are happy for hours, speculating as they see the signal arm raised or lowered on what class the approaching engine will belong to, and as she passes, scribing the number on the paper, and making a tick against it in the booklet. It is so much more satisfactory than watching aeroplanes, and most boys realise it.

Very soon they develop a very quick eye to spot every detail of engine construction and railway working. These two boys at Hatfield, for example, noticed an astonishing amount of details considering that the train was running past them at more than a mile a minute, so that they could have had only a few seconds for observation. Yet in these few seconds one of them had time to notice and retain in his memory that:

> Coming round the corner the express was wobbling. The tender was going one way and the boiler another. The wobble was sideways "like a snake." After the engine had passed him the front wheels came off first and the two back wheels became dislodged later. He also saw the first carriages and the tender "going up" and leaving the lines. He looked immediately afterwards and saw that the line was no longer there.

Very few adults could manage to see so much in a second or two, even if they had known there was to be an accident and they would have to give evidence about it. Were the boys thrilled and excited, or appalled and horrified? Probably all four. But their experience is not likely to prevent them from collecting engine numbers; and it is a safe bet that in their copies of "Locomotives of the L.N.E.R." there is a little note against the number of the engine concerned, a black mark of crime. What engine it was, the newspaper account does not say, but probably the boys mentioned it in court.

But one newspaper made up for its omission by being rather lavish over what the engine driver said and did. He was a top link driver from Doncaster. This is intelligent guesswork, for the paper did not say so; but the driver of the night express from Aberdeen would surely be a top link man, and it was a Doncaster fitter who was called to give evidence about the fitness of the engine for its work. Away they went through the gasworks tunnel, and "were going beautifully on a good, dry rail": he must have a dry rail, must he? The epicure! Then, after Potter's Bar, when they were going at 60 miles an hour, the engine began to roll. It rolled to the left, then to the right, and then it steadied. No doubt it heard its master's voice, for to that driver it was almost human. As it rolled he addressed it in tones of affectionate reproof. "When she rolled," said the driver to the court, "I said to the engine, 'Steady on, old girl.'" She did steady, but only for a moment. Then she left the rails and the rest is just one more chapter in the amazingly slight history of British railway accidents.

I wish I had been present in the court of inquiry. I should like to have seen that driver. Imagination sketches him as a sixty-year-old, calm of face and serene of mind, the very epitome of the time, dependable craftsman. I should like to have seen the people in the court when he told them that at the moment of crisis his first word, a mild protest, was to his engine: "Steady on, old girl!" At that moment, surely, everyone in the court looked at him with real affection, for the ejaculation, automatic and instinctive as it was, came from something deep and appealed to something which is very precious. A whole gospel of work and a whole condition of health and happiness in a worker's mind was revealed so suddenly and yet so clearly. The railways of Great Britain have always managed to call that sense of craftsmanship from their men, but, above all, from their drivers and firemen, than whom no higher type exists in the world.

Plans for widespread electrification of railways are always being canvassed; and we all know all the arguments for it, and they make a strong case. But will any driver of an electric train instinctively call out to his motor, "Steady on, old girl," when it is not running as it should? And will any schoolboy waste a minute in looking at an electric train and collecting its number? A proper railway engine has a strange power of stimulating a sort of virtue. When we have driven it off the rails for good, we shall also have driven away some of its power to create good men, and certainly no aeroplane and no electric motor can take its place.

ROGER LLOYD

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

From Waterloo Bridge to the Netherlands Railways

"Compton," Linden Avenue,
Darlington. July 26

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with interest your editorial note under the above heading in your issue dated July 26. It may interest you to know that the Waterloo Bridge span at Zwolle is the fourth to my knowledge used by the Netherlands Railways in the reconstruction of their major railway bridges.

The other three spans were used in the semi-permanent single-line bridges at Roermond over the River Maas (one span), and at Arnhem over the Lower Rhine (two spans). Both these bridges were opened to traffic towards the end of last year, and at both sites Royal Engineers of the Transportation Branch assisted in the work of reconstruction.

When these spans are used for single-line railway bridges, the main girders are brought closer together by reducing the length of cross-girders and bracing.

Yours faithfully,

J. P. B. KEITH
lately Major, R.E., Tn., H.Q., B.A.O.R.

Locomotive Liveries

Ravensbourne,
Berkhamsted, Herts. August 3

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The recent decision of the L.N.E.R. Company to paint all its engines green in future is a welcome relief from the sordid drabness of the appearance of our locomotives during the last few years. Coupled with the fact that the G.W.R. already for some time has been following the same policy, and that the Southern is also brightening up at any rate its principal classes with its striking malachite green, it is to be hoped that the L.M.S. Company must reconsider its recent regrettable decision to continue painting all its engines black. Even if it were not considered practicable to restore universally the glory of the Midland red, or modified maroon as it has now become, this might at least be applied to its principal classes, whilst the intermediate passenger types, such as the Class "5" mixed traffics compounds, and other 4-4-0's, 2-6-4 T's, and so on, could adopt the new style of black lined out in cream and maroon.

One can see little justification, too, in the adoption of the latest ugly style of numbering in place of the handsome figures hitherto in use, which also were inherited directly from the old Midland. This style of lettering was as distinct and readable as anything that could be desired, when not, of course, obscured by a thick coating of dirt and grime, as is unfortunately so often the case.

Yours faithfully,

H. C. CASSERLEY

Overend Press Agency, Greengates,
Bradford. July 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I feel that I cannot let the letter written by Mr. A. Richards pass without comment. To me, the L.M.S.R. decision to paint all its locomotives black is a retrograde step, especially so in view of the fact that across the Atlantic colour schemes of locomotives and coaches are being developed on pleasing lines. Black is a fine colour for not showing dirt; therefore cleaning can be slipshod to say the least. In the early days of the L.M.S.R. group, Crewe never seemed to get the right "Derby Lake" paint, and their engines and stock varied from a pinky red to a dirty Indian red.

This was not helped by the fact that the North Western was never renowned for a high degree of cleanliness, neither inside nor outside, and one always had the feeling that the Midland colour scheme was frowned on to such an extent that a kind of silent insubordination took place among the cleaners. The old Midland Railway forgot more about clean rolling stock than the North Western ever knew, and when did Mr. Richards see a Midland unit, either engine or carriage, in a deplorable state? I have pictures in my possession taken fifty years ago of a Midland local passenger train which reflects sadly on the neglected stock of to-day.

Mr. Richards has expressed it ably in one sentence—"for economy in first cost, combined with the minimum of attention"—a typical North Western outlook. Why not go the whole hog now, and paint the carriages, too, with black lower panels and "mucky white" uppers. Then we would get the North Western circle of control complete. There are already North Western ideas of running arrangements, North Western general discourtesy of L.M.S.R. staff; all we need is North Western colours.

When will the L.M.S.R. realise that bright, clean rolling stock is one of the best advertisements a railway company could have? The motor coach proprietors always have been quick to realise this, and there seems to be an intensive drive by them to bring their stock up to pre-war standards as regards appearances. It is rare now to see a dirty long-distance coach or pleasure vehicle, and the railway companies, the L.M.S.R. in particular, would do well to take a leaf out of their book. Surely reasonable durability of paintwork and cleanliness are worth the extra cost of maintenance. Hats off to the L.N.E.R. for having the courage to go forward with its new colour schemes. I would like to sign myself "Old Wyvernian," but as I might be accused of hiding myself in sackcloth and ashes, I am, dear Sir,

Yours, faithfully,

H. LESLIE OVEREND

[Before the 1914-18 war the London & North Western Railway was noted for keeping its locomotive and coaching stock very spick and span.—ED., *R.G.*]

Post-War Carriage of Coal

Eynesbury,
St. Neots. July 24

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In stating in your issue of July 19, that it is the operating conditions which have made it impossible to introduce 20-ton and 40-ton wagons, and that it is ridiculous to suggest that they can be used in this country at the present time, Mr. Duncan Bailey displays a complete lack of practical knowledge and personal experience in the actual work of operating the stations, collieries, and works.

Obviously, he does not know that the railway companies themselves officially informed Royal Commissions that 20-ton wagons can be used at all their 6,600 stations, coal yards, etc., without any alterations being required. But—evidently through being misled by laymen, or through not knowing the measurements of the railway gauges and these wagons—some collieries and works reported that they could not accept them, oblivious to the fact that locomotives (which are larger) actually enter all their sidings!

Some 15 years ago, also, the L.M.S.R. built a number of 40-ton self-discharging wagons, and in a demonstration to 200 members of the coal trade, the Mineral Traffic Manager—in urging their general use—said that they could only reduce their charges on coal by having them—thus tacitly recognising that they could be used at collieries, stations, and works.

An old general manager also recently wrote me, saying that there may be a siding on the G.W.R. which cannot accept 20-ton wagons. But nobody knows where it is!

Yours faithfully,

E. R. B. ROBERTS

[Mr. Duncan Bailey's letter, in the parts referred to by Mr. Roberts, dealt with 200-ton (not 20-ton) wagons. The lack of knowledge on affairs appertaining to wagons, suggested as applying to Mr. Bailey, introduces a novel note into an old subject of discussion!—ED., *R.G.*]

HOT BOX ALARMS ON THE NEW YORK RAILROAD.—For thirteen years the New York Central Railroad has been endeavouring to develop a suitable device for giving warning of hot boxes, and now seems to have succeeded. The alarm in its present form consists of two cartridges for each bearing, $\frac{5}{8}$ in. dia. and 7 or 8 in. long. These cartridges are designed to give, simultaneously, visual and olfactory evidence if the axlebox temperature rises above the permissible figure (220° F. for roller bearings, 320° F. for ordinary whitemetal bearings, and 450° F. for grease-lubricated journal bearings). The visual evidence is white smoke, produced by the melting of the fusible plug on one of the two cartridges, which is filled with a mixture of titanium tetrachloride and carbon tetrachloride; olfactory evidence is the odour of ethyl mercaptan which, though harmless, is very penetrating. Extensive research was necessary to decide the best material for the cartridges themselves—a material which would be both leak-proof and not too prone to deteriorate in service.

The Scrap Heap

In Auburn, New York State, police revealed that three boys tried to derail a train—just in case there were sweets or chewing gum aboard.—*From "American Column" in "The Daily Express."*

* * *

WHY?

Why are loudspeakers not provided at some stations?

As and when the material and labour positions permit, additional installations will be provided. They are already in use at most of the larger stations such as Euston, St. Pancras, Rugby, Crewe, Manchester, Liverpool, Glasgow, etc.—*From "The L.M.S. Answers Your Questions."*

* * *

SALESMANSHIP

A correspondent writes that, while making arrangements for the holidays, she went to her local railway station to ask if it would be possible to book through to Lundin Links.

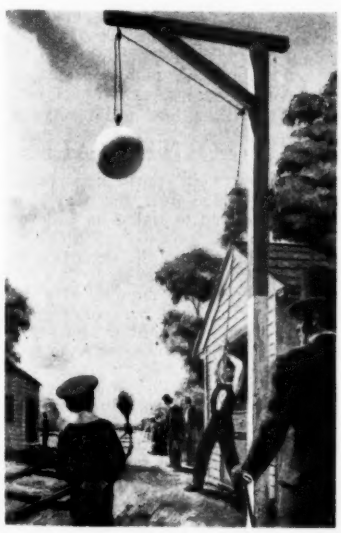
The clerkess was very courteous, and after referring to her official instructions replied:—

"I'm sorry, I cannot book you to Lundin Links, but I can, if that will suit you, to London Euston."—*From "The Glasgow Herald."*

* * *

THE AMERICAN HIGHBALL

What were probably the first railway signals ever to be established on a railway in the U.S.A. were installed in the early 1830s on the old New Castle & Frenchtown Railroad, now part of the Pennsylvania Railroad System. Previously, a locomotive driver had only a time card to guide him. For the original signal system, poles were erected at stations along the line, with crossbars projecting over the track, to which were attached pulleys and ropes. As a train approached, the station agent hauled up a large ball, in much the same way as a flag is hoisted. A white ball hauled up to the crossbar indicated that the track was clear; a black ball, run up



half way, meant stop. This was the origin of the use of the word "highball" to indicate a clear line ahead, which is still used in U.S.A. railway practice. The block signal system was introduced on the Pennsylvania Railroad in 1863.

The Duke of Wellington, who never really liked the press, is alleged once to have said: "Publish and be damned!"

That was a forthright attitude which any journalist can respect. But there are far too many people about today, in Whitehall and its purlieus just as much as in Dover, who are a good deal more mealy-mouthed: "We don't think you ought to publish—except, of course, what our Public Relations Officers give you—because you are malevolent Tory stooges, We'll make lovely speeches about the liberty of the press, but we're afraid of it, and we think you're damned anyway."

That attitude may not be the new crime, "genocide," which Sir Hartley Shawcross has discovered; we think it just plain, short-sighted silliness.—*From "The Evening News."*

* * *

100 YEARS AGO

The Railway Times.

SATURDAY, AUGUST 8, 1846.

WITHOUT doubt, the most important railway meeting which has ever taken place was that which was held yesterday in Euston-square, a full report of which appears in another part of our paper. The London and North-Western Railway Company yesterday held its first meeting under the Bill which has been passed this session for amalgamating the London and Birmingham, the Grand Junction, and the Liverpool and Manchester Railway Companies. The vastness of such an undertaking is only to be equalled by its usefulness; and we trust, and most confidently believe, that the mighty union which has taken place will only have been consolidated for the public good. A more legitimate amalgamation could not have been effected, and we are glad to find that already there is every disposition to meet the wishes of the public, and to afford efficient accommodation to the community.

The happy effects of the mighty fusion which has been accomplished is even thus early perceptible in all parts of the great work now called the London and North-Western Railway. At Euston-square and Camden Town, whole streets are being demolished in order to extend the means of public accommodation. At Wolverton, a little colony of men is busily at work, building new and extensive houses for the reception of the immense number of locomotives belonging to the Company.

* * *

BETWEEN THE LINES

A grasshopper sitting on a railway track—
Singing "Polly-Wolly-Doodle all the day."
Picking his teeth with a carpet tack—...
Singing "Polly-Wolly-Doodle all the day."

Whether the Glasgow lady who recently held up a train by sitting on the railway line was found chanting this lightsome ditty is not recorded. At all events, hers was no grasshopper mind, for no amount of coaxing by the driver could persuade her to move. It is difficult not to admire such sturdy independence. Canute, one may safely guess, would have applauded her action and done the same had these islands been blessed with railways in the eleventh century. But what was her motive? Was she staging a protest against the recent increase in railway fares? If so, her courage will be received with acclamation in India and other countries of the East, where this type of sit-down strike has been reduced to a fine art. But perhaps it was not just a way of letting off steam. She may have wished to board the train. At certain wayside stations would-be passengers have to make themselves conspicuous if they wish the train to stop and take them up. And where there is no station, how could one better draw attention to oneself.

It may be, however, that she was merely walking along the line and sat down because she felt tired. No less a person than Dr. Joad has confessed to a weakness for walking along railway tracks. To take the air along a line still in use is, admittedly, to court destruction as well as a summons for trespass, though on certain branch lines where trains are few and far between, one's chances of survival are infinitely greater than on many roads. On some disused tracks, however, there are no such deterrents. As along a number of derelict canals, one may walk unhindered and undisturbed. Perhaps the lady from Glasgow was dreaming of some such out-of-the-way track, overgrown with nettles and creepers and overhung by dog-roses, as she paced the sleepers near Paisley. Or perhaps she had a vision of herself walking in front of a train holding a red flag in the early eighteen-thirties. But whatever her dream may have been, her toeing of the line proved her undoing, and she has been left to ruminate on the sad fact that it is at times even more costly to stop a train from without than from within.—*From "The Scotsman."*

* * *

NATIONALISATION—GOOD AND BAD

Mr. Geoffrey Crowther, Editor of *The Economist*, speaking at the Liberal Summer School at Cambridge, divided the cases for the nationalisation of certain industries into the following categories:—Good—coal, electricity; not so hot—gas, civil aviation; purely indifferent—the Bank of England, Cable & Wireless; pretty bad—transport, downright bad—steel. — From *"The Times."*

* * *

A sealed carriage was taken from Shoeburyness, L.M.S.R., to a bridge at Bowers Gifford, on August 3, to investigate the death of a man who was found on the line at this point recently. Police were posted along the permanent way, and police and railway officials travelled in the carriage. The carriage stopped under the bridge, and a test was made to show that a man's body could lean out of the window far enough to touch the bridge and receive certain marks. As a result of the test, the police will put forward the theory at the inquest that the dead man leaned so far out of the carriage that he came into contact with the bridge.

Know your Customers

Now, especially, it is important to size up your customers. War has brought us many inexperienced travelers. Be patient and clear in answering their questions. Disabled service men may need help. But be careful to give your aid without making them conspicuous.

Elderly people are apt to be fussy and apprehensive about baggage or connections. Do all you can to reassure them. Nearly everyone is suffering from "war nerves." So extra consideration is needed all along the line. It will do much to make up for wartime shortages, and turn today's patrons into tomorrow's friends.

[*From "Company Manners" issued by the New York Central System*

XUM

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Main-Line Deviation in the Cape

To improve a difficult section of the Johannesburg—Cape Town main line through the Matroosberg (between Kleinstraat and De Doorns), it has been decided to change the route of the present line and to build four tunnels through the mountains. By providing these tunnels, the grade and curvature of the line will become easier, and higher train speeds over the section will be possible. The main tunnel will be eight miles long. Two secondary tunnels, near De Doorns Station and Osplaats Valley, will each be half a mile long, and there will be one tunnel two-thirds of a mile in length.

The present detour will be shortened by four miles and the total length of the deviation will be about 18 miles. It will take at least eight months to establish camps, purchase and assemble the necessary specialised plant, and construct approach embankments and cuttings to the tunnels.

The total cost of the work is estimated at £1,078,500, of which £620,000 is expected to be the cost of the main tunnel. Actual tunnelling of the main tunnel will take about four years, and the whole work should be completed in five years. The Department of Geological Survey cooperated with the railways in carrying out a general survey, but all other exploratory work was done by railway engineers.

Financial Position

The working of the railways, harbours, steamships, airways and aerodromes for March, 1946, resulted in a net deficit of £625,944, which, when compared with the deficit of £428,248 recorded in March, 1945, represents a further shortfall of £197,596. In comparison with the corresponding month of last year, revenue advanced by £287,074, mainly on account of improved goods, coal, and livestock receipts, harbours dues, and additional revenue derived from the operation of airways and road motor services. On the other hand, expenditure increased by £484,670 by reason of higher maintenance and operating costs, and cost of living allowance payments. The operation of all services for the year ended March 31, 1946, resulted in a net deficit of £1,870,088 as compared with the net deficit of £288,465 recorded during the previous financial year.

April working resulted in a net surplus of £233,327, which, when compared with the deficit of £188,524 in April last year, is an improvement of £421,851. In comparison with the corresponding month of last year, revenue increased by £684,550, mainly on account of improved passenger, goods, and coal receipts, harbour dues and additional revenue derived from the operation of road motor and airways services. On the other hand, expenditure, excluding net revenue appropriations, increased by £302,726 by reason of higher maintenance and operating costs and cost of living allowance payments.

Investigating Main-Line Accelerations

A 24-hr. run from Johannesburg to Port Elizabeth is foreshadowed in the performance of a test train which completed the journey in 23 hr. 37 min. The trial was one of a series which the railways are conducting to ascertain to what degree main-line services can be speeded up when the rolling stock position improves. Two trials were held on the Johannesburg-Durban and Johannesburg-Cape Town lines earlier in the year, and both were successful in reducing the existing running times. Three more tests have been planned. The first will be from Johannesburg to Mossel Bay, the second from Johannesburg to East London, and the third from Bloemfontein to Durban.

INDIA

Collision at Kundian

Eleven persons were killed and seven injured as a result of a collision between an engine and a shunting rake in Kundian yard on the Campbellpur-Multan section of the North-Western Railway on July 9. The shunting rake consisted of an engine, one wagon, and a brake van. There was no interruption to traffic.

Full Service Restored on B.B. & C.I.R.

With the restoration on July 15 of two more trains between Bombay and Ahmedabad, and Bombay and Baroda, the full service as operated by the B.B. & C.I.R. before the war is again being provided.

Discussions on Wage Increases

Discussions have taken place between delegates of the All-India Railwaymen's Federation and the Railway Board as to the method by which the *ad interim* relief recommended by the Railway Standing Finance Committee should be distributed. The relief was to amount to an additional expenditure of Rs. 5 crores a year, which, with back effect from July 1, 1945, would entail a total debit of Rs. 9 crores during the current financial year.

The federation asked for direct relief at a flat rate for workers drawing up to Rs. 250 a month. The flat rate would be approximately Rs. 5. The Railway Board, however, felt that relief should bear some relation to the individual, which could be achieved by increments subject to certain maxima and minima so as to do justice to all. It seemed likely that two such increments could be provided.

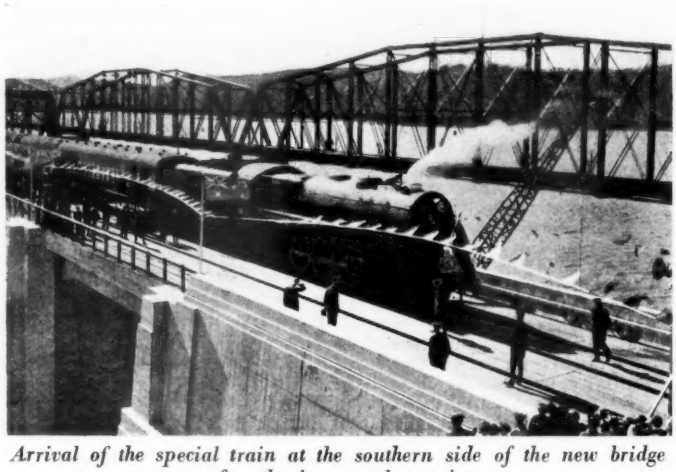
The federation further asked that no distinction be made between those on the old and the revised scales of pay, and, finally, expressed the view that in whatever way relief was given it should result in an increase in emoluments of Rs. 5 a month to those drawing under Rs. 30 a month, and an increase of Rs. 4 a month to those drawing from Rs. 30 to Rs. 250 a month.

The Railway Board promised to give the greatest possible weight to these opinions, but could not commit the Government to particular features of the scheme, more especially in regard to the Rs. 250 a month limit.

Attempted Derailment of Mr. Gandhi's Special Train

An inquiry has been instituted into the incident which occurred at Neral on the night of June 30, when Mr. Gandhi's special train narrowly escaped derailment. Some boulders were found on the rails. Mr. Gandhi and party were travelling from New Delhi to Poona at the time of the incident. Neral is some 68 miles below the foot of the Bhor Ghat, between Bombay and Poona. A number of cases of looting of goods trains has occurred on this section of line.

Opening of the New Hawkesbury River Bridge



Arrival of the special train at the southern side of the new bridge after the inaugural crossing

NEW SOUTH WALES

Opening of New Hawkesbury Bridge

The new bridge over the Hawkesbury River was opened to traffic on July 1 [see also our July 5 issue.—ED., *R.G.*]. The ceremony began with the departure of a special train from Sydney at 10.35 a.m. for Hawkesbury River. This train of seven carriages carried members of the Commonwealth and the State Parliaments, Consuls of other countries, and representatives of the Public Service, the professions, and the business world. It was hauled in the forward direction by a "C.32" class engine, another "C.32" engine assisting from Sydney to Hornsby.

Passing over the old bridge to the Newcastle side, clear of the points in the down main line at 37m. 25ch., the train was stopped. A "C.38" class engine was attached to the rear of the train and the "C.32" class engine detached. The train then passed over the new bridge to the mouth of the tunnel on the southern bank, where the main ceremony was held. The Chairman of the function was the Commissioner for Railways, Mr. T. J. Hartigan,

C.M.G., and the speakers included the Minister for Transport, the Hon. M. O'Sullivan, M.L.A., and Commonwealth and State politicians representing the area.

After the ribbon was cut and the bridge declared to be open for traffic by the Premier and Colonial Treasurer, the Hon. W. J. McKell, K.C., M.L.A., the guests were entertained at a luncheon in a large marquee erected for the occasion. The special train departed from Long Island (Hawkesbury River) at 3 p.m. and arrived in Sydney at 4.10 p.m.

WESTERN AUSTRALIA

Passenger Rolling Stock Programme

Half the Railway Department's coaching stock has been in use since the early years of the century, and, until recently, there had been no building of complete new cars for many years. Work is now proceeding on a second suburban train of saloon coaches, similar to that described in *The Railway Gazette* of March 1, and it is hoped it will be in commission next month. In the meantime, plans are being prepared for six steel sleeping coaches for the Westland interstate express. These coaches will set a new high standard for railway travel in this State, and, judging by the appearance and comfort of a model, they should convince many travellers that the 3-ft. 6-in. gauge system is capable of providing much more comfort than is usually admitted.

Two dining cars and two kitchen cars —all of steel construction and air-conditioned—are in prospect, but are still in the planning stage. The diners, which will be built as wide as possible, will have accommodation for 62 passengers seated four to a table on each side of the aisle. The object in building the kitchen cars as separate units is to provide more space for the chefs and additional comfort for the passengers.

For its general country services the department intends to build a day coach of the saloon type and to provide buffet facilities. One of its more important jobs in this sphere, however, will be the construction of 18 carriages for the new 3-car diesel trains on order.

UNITED STATES

St. Louis—Texas Speed-Up

New schedules which came into force on June 2 have effected substantial reductions in journey times by Missouri Pacific trains between St. Louis and Texas. The North Texas and California section of the "Sunshine Special" now gives accelerations of 1 hr. 20 min. from St. Louis to Dallas, 1 hr. 25 min. to Forth Worth, and 1 hr. to El Paso. A through sleeping car to Los Angeles, worked forward from El Paso by the Southern Pacific, arrives 2 hr. 40 min. earlier. Similar accelerations have been made in the South Texas and Louisiana sections of the "Sunshine Special," and in the corresponding eastbound services. A new eastbound section of the "Southerner" provides for the first time daylight passenger service from Dallas and Fort Worth to St. Louis.

Warning Signal for Locomotive Transmitters

Radio telephone transmitters on Seaboard Air Line locomotives have been equipped with an oscillator for radiating a disinctive warning signal in the event of out-of-course stops. Tests have shown that the warning signal is received and recognised on other locomotives at distances from one to three miles greater than the range of normal telephony transmissions. The warning device, known as the Slowtone, has been developed by the Bendix Radio Division of the Bendix Aircraft Corporation. When switched on it radiates a series of five short dashes separated by 3½-sec. intervals during which the transmitter is switched off and the receiver comes into operation. Speech can be transmitted while the Slowtone is in operation by pressing the "push-to-talk" switch in the usual way, the dashes then being heard as a background to the voice transmission.

CANADA

Plan to Purchase Manitoba Railways

The Minister of Transport introduced a Bill in the Canadian House of Commons recently to provide $7,000,000 for the purchase of 354 miles of railway in Manitoba now leased by the Government. The Canadian National Railways leased the four lines, amalgamated in the Manitoba Railway Company, for 999 years in 1901, at an annual rental of $300,000. The Bill will permit the C.N.R. to exercise an option to buy the lines, as it is estimated the railways will save approximately $90,000 on the basis of an outright purchase.

Freight Traffic Recovery in May

The monthly movement of railway revenue freight for May, while lower than in the corresponding month last year, showed an improvement over April, according to figures released by the Dominion Bureau of Statistics. Loadings amounted to 7,810,000 tons compared with 7,339,000 tons in the previous month, an increase of 371,000 tons. Compared with the total of 9,076,000 tons a year ago, the decrease was 1,266,000 tons, or 13·9 per cent. The May total was the second highest this year, but was the smallest May total since 1942. During the month cars loaded totalled 296,000, compared with 311,000 cars for the corresponding month in 1945, a decrease of 15,000 cars. Compared with the total of 282,000 cars in April, there was an increase of 14,000 cars.

Cumulative tonnage loadings for the first five months of the current year totalled 37,801,000 tons, compared with 41,019,000 tons for the similar period last year. Cumulative figures for the number of cars loaded amounted to 1,430,000 cars for the first five months of the current year. This compares with 1,450,000 cars for the same period in 1945, a decline of about 20,000 cars.

FRANCE

Air Passengers at Invalides Station

The Ministry of Public Works and Transport arranged with the City of Paris early this year that Air France, the French national airways company, should utilise the Invalides railway station as a central air terminus. The City of Paris had bought the station in 1937 from the French National Railways Company (S.N.C.F.) to use it as an exhibition hall. Under the arrangement with Air France, the S.N.C.F. retains one-third of the basement for its electric railway line to Versailles, and Air France has the use of two-thirds of the basement and the whole of the ground floor, in all an area of nearly 19,000 sq. yd. Airline passengers began to be dealt with at the station on June 25. The conversion of the station was reported in *The Railway Gazette* of April 12.

The Invalides Station is in the heart of Paris, at equal distances from the airfields of Orly and Le Bourget, and near to the embassies, the French Government departments, and the leading hotels. The station has undergone no external change, but two ramps for motor coaches lead down to the basement. The interior of the great hall has been adapted to air travel requirements, with five large counters where luggage can be weighed and tickets issued. Travellers then descend to waiting rooms giving direct access to the cars which take them in 30 minutes to Orly or Le Bourget.

Rail Travel to Airports Proposed

The Minister of Public Works and Transport said at the opening ceremony on June 15 that the Invalides had been selected as the site for the air station because it could be converted quickly and also because if the traffic proved too great for the road services, the existing railway could be utilised for carrying passengers to Le Bourget, and, by piercing a tunnel from the Invalides to the Gare d'Orsay, also to Orly. In any case the tunnel would become necessary when the Paris Metro lines were connected with the suburban lines and a deep tunnel provided rapid transit below Paris. The Minister further indicated that the Invalides air station was only a provisional solution, and that a larger station would be built eventually at the Porte Maillot, near the Bois de Boulogne.

Paris Metro Annual Report

Increasing traffic on the railway and bus lines of the Paris Metropolitan Railway Company was the outstanding feature in 1945, according to the report submitted to shareholders at the annual meeting on June 6. Total receipts for the year were £7,066,830 (at fr. 480 to the £), against £4,223,760 in 1944. Out of 360 stations on the Metro system, 78 still remained closed at the end of the year. The rolling stock comprised 1,395 motor coaches, 1,382 trailers, and 7 goods locomotives.

Fifteen motor coaches for the Sceaux lines were in course of construction. Plans for new articulated rolling stock were being pushed forward.

AUSTRIA

Electrifying 2,000 km. of Railways

Work has been resumed on the electrification of the Austrian State Railways as part of a programme to convert 2,000 km. of railways to electric traction within twelve years. This will be 50 per cent. of the whole Austrian rail network and will cover routes which carry 75 per cent. of all State traffic.

Programme for 1946

In the course of the present year electrification will begin on the sections from Attnang-Punchheim to Linz, Bischofshofen to Eben, and Spittal to Villach. The work has received the encouragement of British and other Allied authorities, and its need has been emphasised by the shortage of coal for steam trains. Present timetables show that while an almost peacetime schedule has been run on the existing electrified sections, steam trains have been hampered by lack of coal.

It is estimated that within a short time 50,000 tons of coal a year will be saved by electrification.

XUM

Heavy Standard-Gauge Locomotives Carried on Metre Gauge

How the Iraqi State Railways arranged to transport 93 fully-erected "Stanier" 2-8-0 W.D. engines 320 miles over a metre-gauge main line

Pair of wagons being placed on ramp line for off-loading

AT the end of the war the British military authorities wished to withdraw a number of standard-gauge British locomotives from Persia. Because of the shipping situation, withdrawal by this means was difficult, and so the authorities asked the Iraqi State Railways administration if it could undertake to transport 93 fully erected L.M.S.R.—or Stanier—type W.D. 2-8-0 locomotives from Persia *via* Basra and the metre-gauge main line thence to Baghdad. (See editorial note on page 142.)

During the war the I.S.R. had carried many exceptional out-of-gauge loads over the metre-gauge section on behalf of the British Army, including armoured fighting vehicles and a complete standard-gauge ambulance train. At first sight, however, this even more outstanding load appeared to be beyond the capacity of the line both in weight and size, and in addition there were no vehicles for carrying loads of such magnitude.

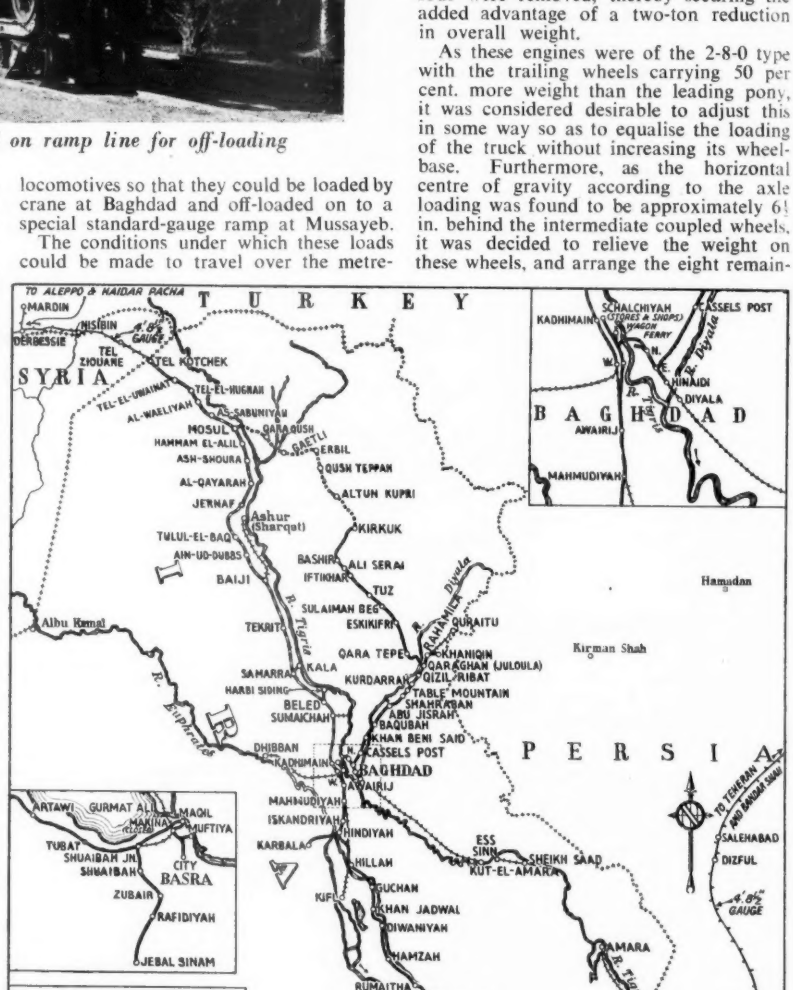
In point of size, the width of the W.D. engines, 8 ft. 7 in., was well within the 10 ft. 4 in. permissible width on the Basra-Baghdad section. Also, though their height, however loaded, exceeded the permissible dimension, there was only one overbridge south of Baghdad to obstruct their passage, and that could be avoided if the engines were off-loaded from the metre-gauge carrying trucks at Mussayeb, near Hindiyah, on to the new 42-mile standard-gauge line, avoiding Baghdad, as mentioned in an article "Railways in Iraq, 1941-43" in *The Railway Gazette* of May 10, 1946. The locomotives could then be hauled on their own wheels from Mussayeb *via* the junction of the new line with the Baghdad-Mosul section, two miles north of the capital.

With regard to weight, investigation showed that, even if the engines were conveyed on trucks with eight axles, the 9-ton permissible axle load would be exceeded. This difficulty was, however, overcome by the Chief Engineer agreeing to an increase of 2 tons an axle, on condition that the loads were well spaced over the length of the train, and that speed did not exceed 15 m.p.h. The only problem then remaining was to design and construct suitable vehicles for carrying the locomotives so that they could be loaded by crane at Baghdad and off-loaded on to a special standard-gauge ramp at Mussayeb.

The conditions under which these loads could be made to travel over the metre-gauge line imposed drastic limiting factors in the design of the trucks, for, in spite of the increased axle loading to 11 tons, it was still necessary for the bogies and the truck frame to be of the lightest construction so as to keep the gross load to a minimum. The high centre of gravity of the engines when loaded also required that the truck frame should be built to the lowest level. Moreover, the sharp curves on the particular wharf at Basra, where the engines were to be loaded, imposed a severe restriction on the length of the wheelbase.

For off-loading the engines from the ends of the trucks it was essential for the latter to be fitted with rails, and for them to be sufficiently strong and suitably constructed for this purpose. On the other hand, it was foreseen that, as the locomotives were to be carried on their own wheels and springs, the load could be made relatively flexible, and, to achieve this, the connecting, coupling, and motion rods were removed, thereby securing the added advantage of a two-ton reduction in overall weight.

As these engines were of the 2-8-0 type with the trailing wheels carrying 50 per cent. more weight than the leading pony, it was considered desirable to adjust this in some way so as to equalise the loading of the truck without increasing its wheelbase. Furthermore, as the horizontal centre of gravity according to the axle loading was found to be approximately 6½ in. behind the intermediate coupled wheels, it was decided to relieve the weight on these wheels, and arrange the eight remain-



The railways of Iraq and neighbouring territories

ing load points over four suitably-spaced bogies.

For the construction of these vehicles, built-up diamond-frame bogies from tank wagons, having 9 in. × 4½ in. dia. journals with centres 4 ft. 10 in. and a wheelbase of only 4 ft. 9 in. were eventually selected. These were considered the most suitable of the types available, for, apart from being light in weight, the pressed-steel bolster, helical bearing springs, and detachable axle boxes admitted of easy modification to suit the arrangement of these special trucks.

One of the main objects of the design was to bring the load into line with the bogie side frames and directly over the bearing springs, thereby relieving the bolster and bogie pivot centres of any direct load, and so dispensing with the need for fitting cross-members to the frame. This practically solved itself by having to space the rails at 4 ft. 11 in. centres—one inch more than the journal centres—in order that the locomotives could be mounted on their wheels and run off the end of the trucks.

New side bearers spaced 4 ft. 11 in. with 12 in. square bearing plates were fabricated and so arranged as to bridge the top bar of the bogie frames when fitted to the bolsters. As the bogie centre pivots became largely ineffective, each side bearer was fitted with a 2-in. dia. vertical pivot pin. These pivot pins, which passed through elongated holes on the underside of the side members of the frame, acted as guides, but allowed the bogies free movement for curve negotiation.

Low-Pitched Special U-shaped Underframe Members

The choice of materials for building the frames was limited, and the side members had to be fabricated from three 6 in. × 3 in. channels, one horizontal and two vertical, with the necessary stiffening plates to give the required strength; a 75-lb. rail was placed between them for mounting the locomotives. This method of construction provided a light U-shaped compound section of shallow depth, and, as the base of the 75-lb. rail was only ½ in. above the side bearer plates, the height from the metre gauge track to the standard-gauge rail level was brought down to the lowest possible dimension.

To negotiate the sharp curves in the dock area over which these loads had to be hauled, with the intermediate bogies free to move sideways, it was desirable to have the total wheelbase as short as possible in order to minimise the bogie throwover. The axle loads and the wheelbase of the locomotive and the necessity of coupling the trucks to an end ramp also largely influenced the ultimate length of the wheelbase.

The distribution of the load over the eight axles was accomplished by making the frame in halves, and by placing the engine in a position to make the weight as nearly as possible the same on each bolster, although, with the intermediate coupled wheels relieved of their load, slightly more weight was thrown on the trailing half of the truck. The half-frames of the truck were free and independent of each other, with a gap of 3 in. between them at the centre, but when loaded became semi-rigid horizontally due to the flanges of the locomotive engaging with the rails. The side members of the frame were held at 4 ft. 11 in. centres by distance bars of 6 in. × 3 in. channel passing over the bogie centre pivots. The leading and trailing bogies were pivoted through

Transporting Standard-Gauge 2-8-0 W.D. Locomotives on the Iraqi State Railways

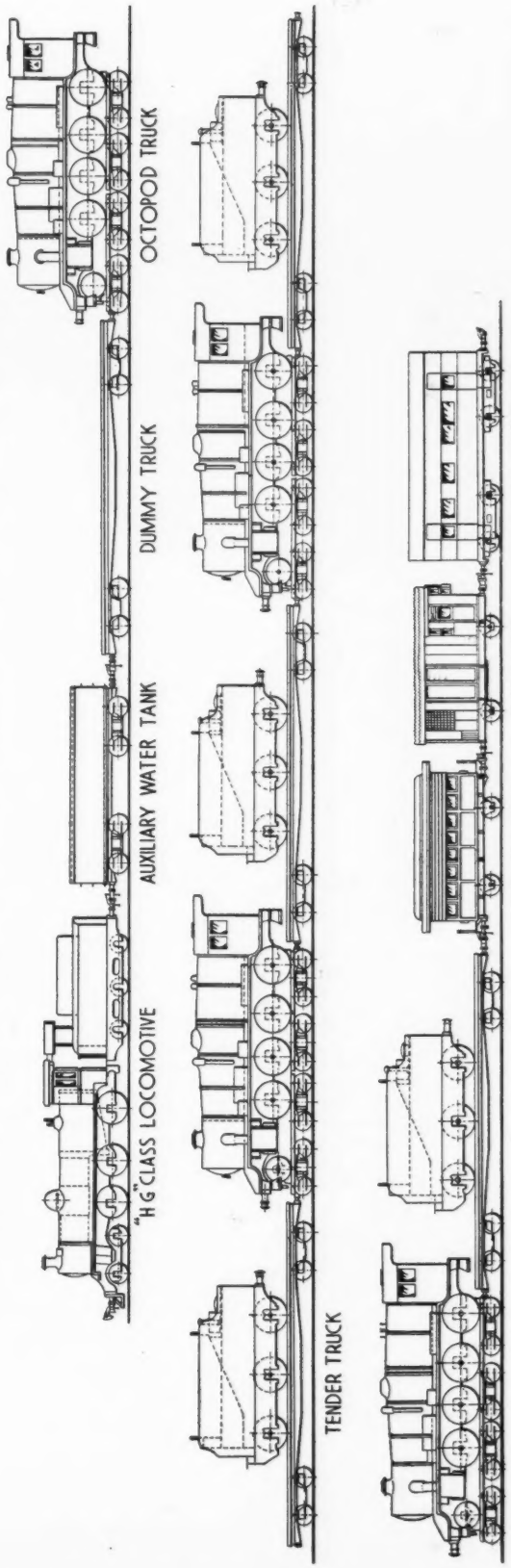
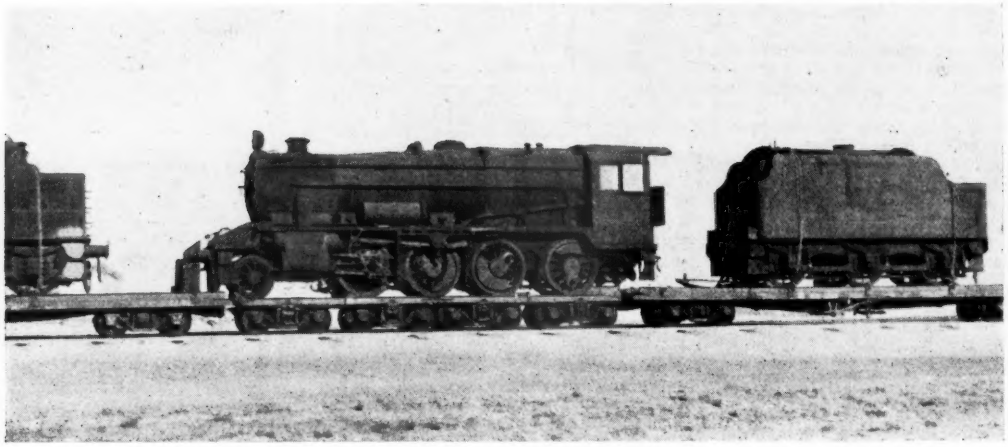


Diagram showing arrangement of the train and loads. The distribution of the principal loads is shown in the diagram on the next page



A pair of wagons loaded

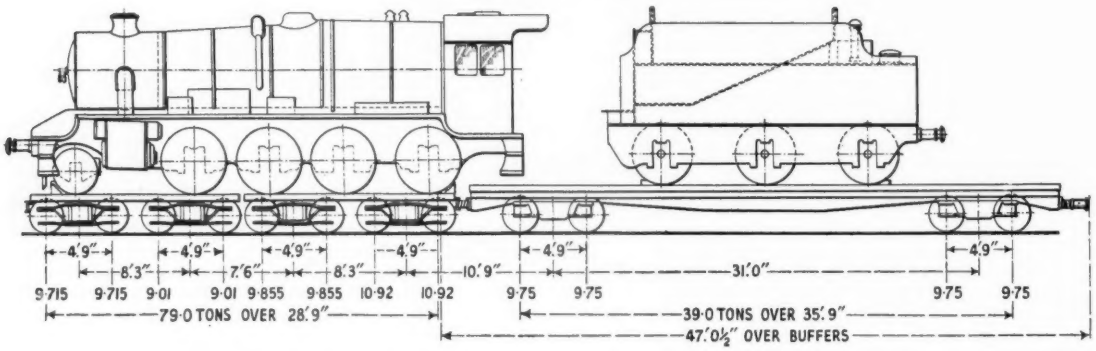


Diagram showing principal dimensions and weights of the loaded wagons

these distance bars. In the case of the intermediate bogies transverse elongated holes were provided for the side bearer pivot pins to allow the bogies side movement.

The drawgear was built independently of the frame and merely linked the four bogies together through their centre pivot pins. The buffer, together with the drawbar between the outer and inner bogies, was built up in one piece from 6 in. × 3 in. channels, and the intermediate section between the centre bogies was connected together by pins to allow the drawgear to move over with the inner bogies on curves. Centring springs were fitted to the intermediate bogies, but as they were not fully effective when under load, the drawgear was mainly relied upon to realign the bogies after passing round a curve.

The drawbar extension, forming the buffer face, was made just sufficiently long to give the necessary end clearance on curves when coupled to another vehicle, and coupling hooks were fitted direct to the drawbar at both ends in order to save weight. As it was not convenient for the drawgear to be fitted with springs, the required resilience for haulage was gained by the trucks being coupled between two vehicles having normal buffers.

These "octopod" trucks, as they came to be known, had many novel features, as the main principle of the design was flexibility. With metre-gauge central buffer couplers the need for fitting headstocks did not arise, and to ensure that the frame would adjust itself, the main pull was on the intermediate bogie centre pivot and back through the side bearer pins to the side members of the frame. Actually, due to the drawbar moving over with the centre bogies when on a curve, the total wheelbase was very slightly shortened, but as all the locomotive wheels were free to adjust themselves, this variation was of no consequence.

On a 14-deg. (about 6-ch.) curve, the throwover of the intermediate bogies was calculated to be nearly 2 in., but the actual movement was seldom more than 1 in., and this was accounted for by the end play in the boxes and the freedom of the bolsters in their guides. The tare weight of the truck was 13.6 tons or 1.7 tons per axle, and the gross load, over a wheelbase of 28 ft. 9 in., was 79 tons with a maximum axle load of 10.92 tons. With a load-to-tare ratio of nearly 5 to 1 these trucks are probably unique.

Transporter Trucks for the Tenders

The tenders, although only 24 ft. 7 in. long, were carried on 43 ft. bogie flats so as to accommodate the overhanging ends of the locomotives when marshalled on a train, and as the tenders weighed 27 tons on a wheelbase of only 15 ft., it was necessary to relieve the middle wheels to avoid a heavy concentrated load on the centre of the wagons. Rails at standard gauge width were fitted to the deck of the tender-carrying trucks for the purpose of mounting and off-loading the tenders, and yoke head buffers were provided at both ends for coupling up to the octopod trucks marshalled at each end.

Four W.D. engines and tenders with auxiliary vehicles made up a train load. The marshalling was: Metre-gauge engine, tender and auxiliary water tank, dummy truck, the four pairs of engine- and tender-carrying trucks (each engine followed by a tender), a coach for the crew, brake van and officer's saloon. The gross load of the carrying-trucks and dummy was 500 tons carried on 52 axles.

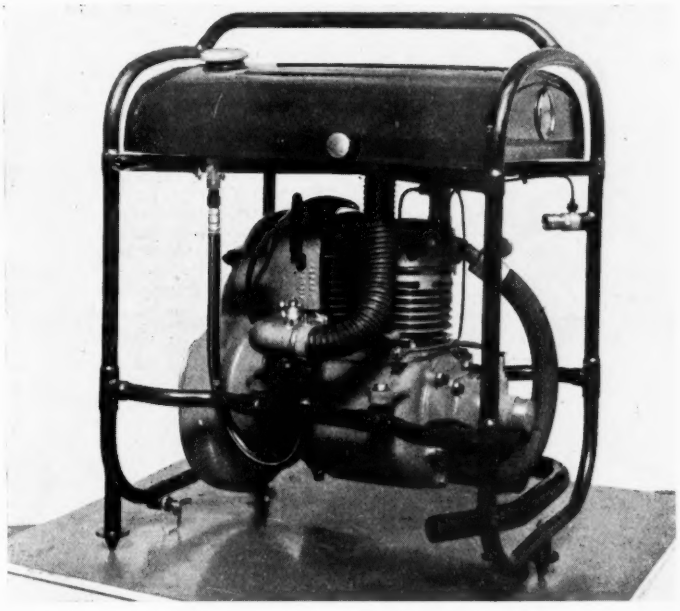
The off-loading procedure at Mussayeb consisted of bringing a pair of trucks coupled together carrying an engine and a tender and placing them against the special ramp with the engine leading. The 75-lb. carrying rails of the octopod trucks, when loaded, were ½ in. lower than the ramp line to permit of the frames being jacked up all round to take the weight before pulling the engine off. The rails of the truck were connected by fishplates to the ramp line, and a rail bridge piece was fitted between the two trucks; then with the engine and tender coupled together by two adjustable drawbars, a standard-gauge shunting engine was brought up to draw them off.

The first truck was built and had completed its trials by October 6, 1945, and the first load of four engines arrived at Mussayeb on December 13, 1945. By the end of February, 1946, 32 locomotives had passed through Baghdad by this route.

These special locomotive-carrying trucks were designed by Mr. W. C. Ikeson, M.I.Loco.E., Chief Draughtsman of the Iraqi State Railways, and the work was carried out entirely in the railway's workshops at Baghdad, the whole job being under the supervision of Mr. H. A. Cotching, Chief Mechanical Engineer, I.S.R., to whom we are indebted for the information contained in this article.

A New Portable Air Compressor

A compact and lightweight petrol-driven compressor that can be carried by one man



DURING the war the Hymatic Engineering Co. Ltd., Redditch, manufactured some 115,000 air compressors for the operation of undercarriages, flaps, turrets, and similar services in aircraft. The experience gained in the production of small lightweight units capable of a high power output has enabled the company to introduce a new petrol-driven set for general engineering use which weighs only a little over 50 lb.

The Hymatic portable set consists of a 125 c.c. two-stroke engine driving a crankshaft which is common with that of the compressor. Since the two cranks are at 180 deg. to each other, the engine and compressor pistons move in opposition, ensuring good balance and absence of vibration in running. A regulator valve in the compressor cylinder head maintains the air pressure at 80 lb. per sq. in. by regulating the intake to the consumption at any moment, and secures economical operation in all conditions of load.

The low weight and portability of the unit has been achieved partly by the use of light alloys wherever possible, and partly by a novel design which utilises a portion of the tubular frame as an air receiver and cooler. At various points the air stream impinges on the corners of the frame in order to separate oil and water from the air before the outlet is reached.

Special attention has been paid to filtering the air used for cooling and the supply drawn into the compressor. The flywheel fan on the engine, which cools the engine and the compressor, also blows clear any dust or other particles that collect on the filters. The engine has a flywheel magneto, and is lubricated on the petrol-oil system. By special design of the transfer ports, the necessity for a deflector on the piston is avoided, and the resultant flat-topped piston requires less frequent decarbonising. The engine runs at 2,800 r.p.m., and is started by a rope and pulley.

The compressor is of the single-stage type, with a piston displacement of 10 cu. ft. per min. at 2,800 r.p.m. Lubrication is on the splash system from a sump of large capacity. An air pressure gauge is fitted at the end of the petrol tank, which is mounted on rubber to absorb vibration and facilitate reading of the gauge. Rubber mountings support the complete engine and compressor unit in its frame.

Servicing Arrangements

Servicing arrangements made by the Hymatic company provide users with rapid replacement of a complete set in the event of any part requiring repair, so that there will be the minimum interruption of work. The compactness of the equipment, which can be carried in the back of a private car, facilitates collection and delivery for this purpose.

A demonstration of the Hymatic portable set was given at the company's works on July 24, when various standard types of small pneumatic tools were shown in operation from the compressor on light building tasks such as plugging walls, drilling woodwork, screwdriving, routing mortar, chipping stone slabs, and spray-painting.

The complete unit can be fitted into a light wheelbarrow-type frame with a container for outdoor liquid or powder spraying of insecticide, weedkiller, fertilisers, and so on. In this readily mobile form the equipment is also convenient for tyre inflation.

Layout of a Modern U.S.A. Locomotive Shop

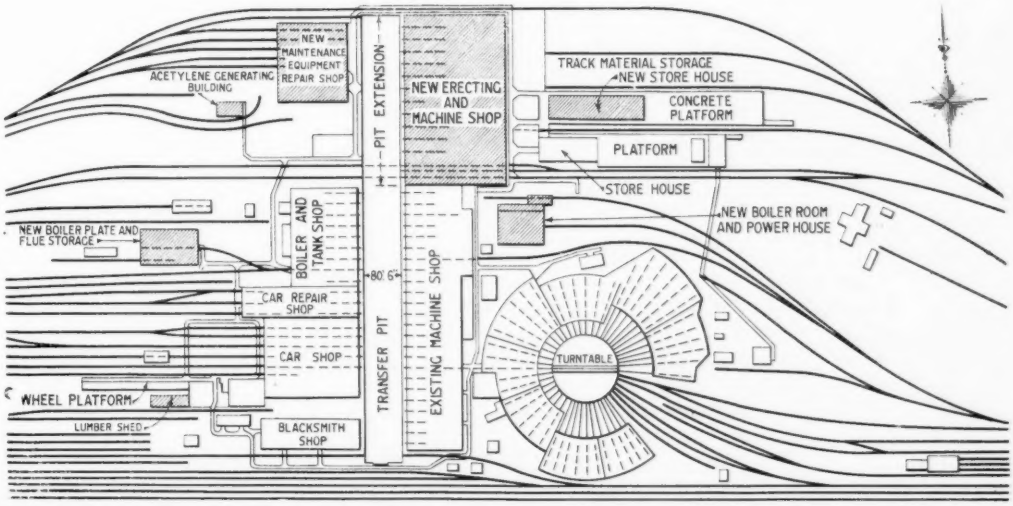
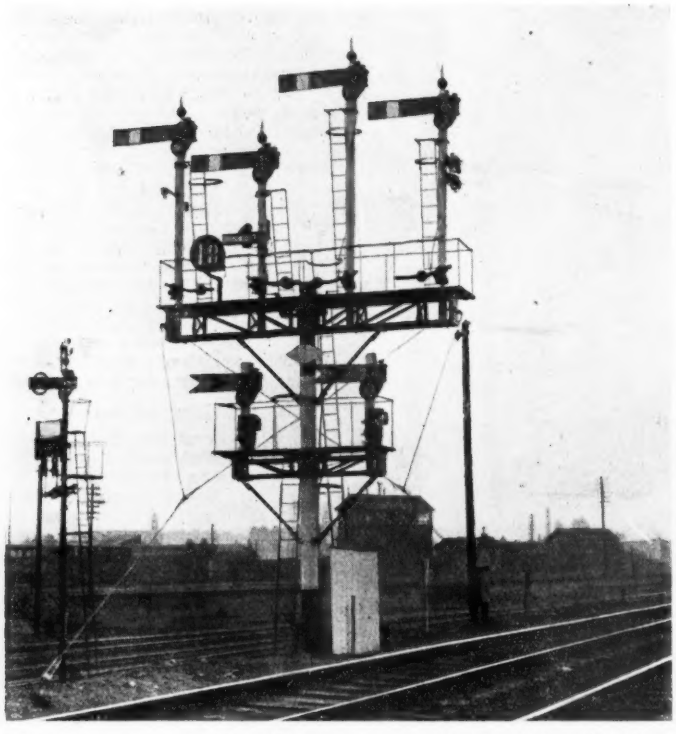


Diagram showing general plan of the Northern Pacific Railway locomotive shop at Livingston, Montana, which has been enlarged and modernised. The extensions are shaded

New Signals at Reading West, G.W.R.

Bracket home signals, with "slip distants" to show that conditions are correct for detaching a slip portion



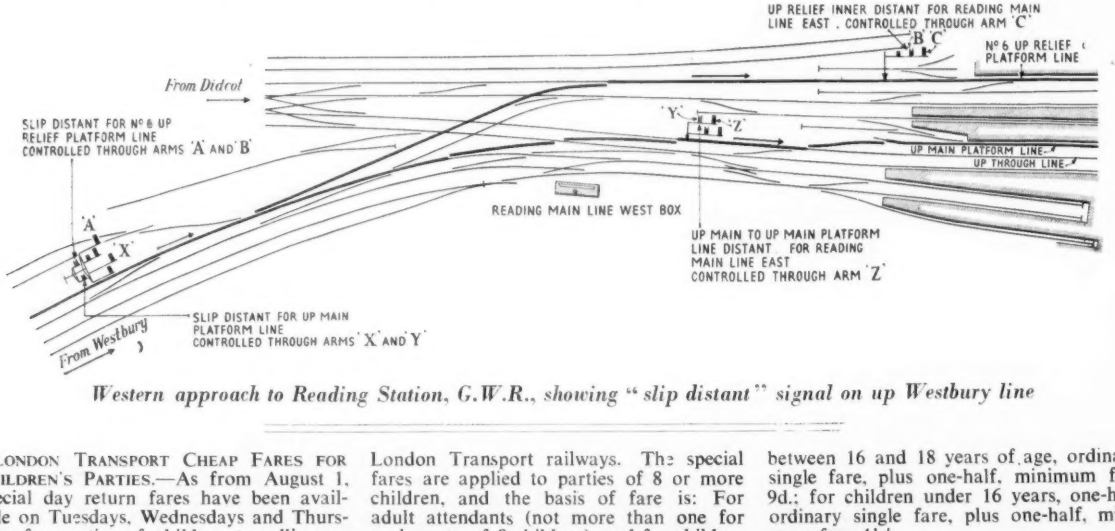
Up branch home signals with power-operated "slip distants" below, Reading West main box, G.W.R.

THE photograph reproduced herewith shows a particularly neat design of bracket home signals recently installed at Reading Main Line West Junction signal box, Great Western Railway, to control movements from the branch connection (Westbury line) to the lines in the station. They lead up to the home signals in rear of the station, which stand in advance of the box concerned and carry below them the ordinary distant signals for the Main Line East box at the London end of the platform lines.

Below the main bracket is a subsidiary one carrying short distant arms which are "slip distants" provided in connection with the re-introduction of slip coach working in the up direction at Reading, to be observed by the guards before proceeding to make the arrangements for detaching the slip portions. These distant arms are operated by electric motor machines, clearly seen in our illustration at the base of each short doll post.

The main post and dolls are of tubular construction, and the arms are of the G.W.R. standard design now used in all new work. This group of signals was designed in the office of the Signal & Telegraph Engineer, Mr. F. H. D. Page, to whom we are indebted for the accompanying diagram of the layout of lines over which the various arms read.

A FAMOUS LONDON TRANSPORT POSTER FOR THE LONDON COUNTY COUNCIL.—At the County Hall, Westminster, on July 31, Lord Ashfield, Chairman of the London Passenger Transport Board, presented to Mr. John Cliff, Chairman of the London County Council, the original of one of the "Proud City" series of posters by Mr. Walter E. Spradbery, which made their first appearance at L.P.T.B. stations towards the end of 1944. These posters, which depict six well-known London landmarks following long periods of air attack, created more than usual interest, and were destined to be seen by far more than the million or so passengers who travel by Underground daily. Seldom has such a series of London Transport posters caught the public fancy so completely. Within a very short time applications for copies came from all parts of the world, and in all more than 39,000 copies of the posters were printed. By a special arrangement with the Ministry of Information, reprints of the posters were distributed to Legations and other Government offices, and supplies were sent to the Middle East, to be followed by reproduction in Services' newspapers. The original referred to in this note was, appropriately, the painting showing bomb damaged St. Thomas's Hospital, with Westminster Bridge and the Houses of Parliament in the background. Lord Ashfield, making the presentation, referred to the high standard of public service expected from such bodies as the London County Council and the London Passenger Transport Board, and Mr. John Cliff, replying, expressed the belief that the painting would serve as a constant reminder of the ordeal through which London had passed, and should prove an added incentive to further effort.


UP RELIEF INNER DISTANT FOR READING MAIN LINE EAST, CONTROLLED THROUGH ARM 'C'
'B' 'C'
No 6 UP RELIEF PLATFORM LINE
From Didcot
SLIP DISTANT FOR No 6 UP RELIEF PLATFORM LINE CONTROLLED THROUGH ARMS 'A' AND 'B'
'Y' 'Z'
UP MAIN PLATFORM LINE
UP THROUGH LINE
READING MAIN LINE WEST BOX
'A'
'X'
UP MAIN TO UP MAIN PLATFORM LINE DISTANT FOR READING MAIN LINE EAST CONTROLLED THROUGH ARM 'Z'
From Westbury
SLIP DISTANT FOR UP MAIN PLATFORM LINE CONTROLLED THROUGH ARMS 'X' AND 'Y'

Western approach to Reading Station, G.W.R., showing "slip distant" signal on up Westbury line

LONDON TRANSPORT CHEAP FARES FOR CHILDREN'S PARTIES.—As from August 1, special day return fares have been available on Tuesdays, Wednesdays and Thursdays for parties of children travelling on London Transport railways. The special fares are applied to parties of 8 or more children, and the basis of fare is: For adult attendants (not more than one for each party of 8 children), and for children between 16 and 18 years of age, ordinary single fare, plus one-half, minimum fare 9d.; for children under 16 years, one-half ordinary single fare, plus one-half, minimum fare 4½d.

Murex Remote-Control Welding Current Regulator

An automatic method of adjustment

ONE of the most tiresome drawbacks of former motor-generator sets used in electric welding has been abolished by Murex Welding Processes Limited, of Waltham Cross, Herts, for that firm has recently patented an automatic method of adjusting the welding current in such sets without obliging the operator to leave his work and return to the equipment. A further attraction is that no additional cables are required; the adjustment is obtained by the short-circuiting of the electrode holder to the work.

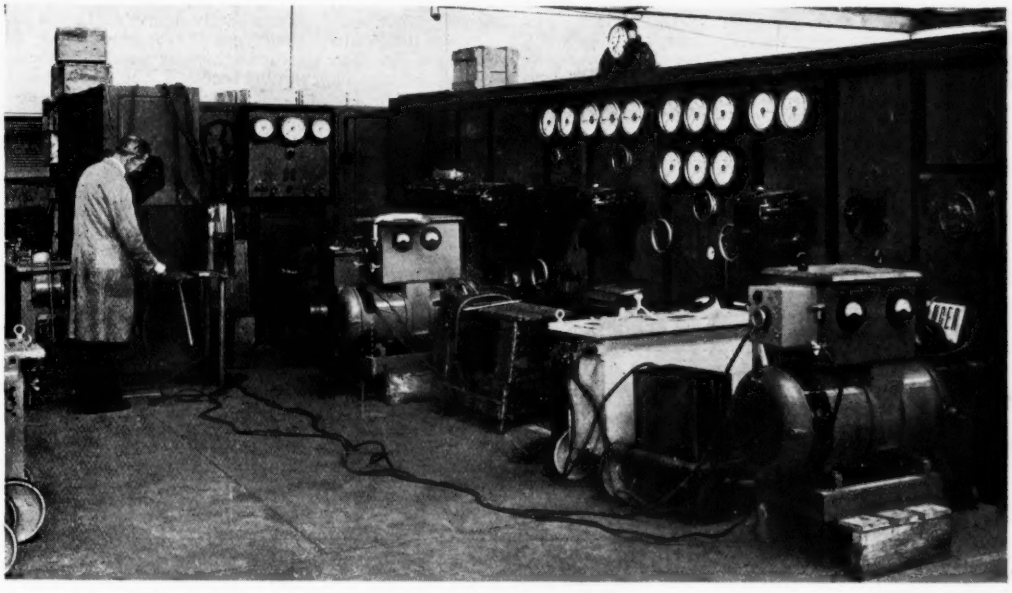
The device can be fitted to the company's standard a.c.-d.c. motor-generator equipments and comprises a small steel box containing relays, electric motor, and mechanism, which is mounted on the end of the cubicle of the welding equipment, after removing the handwheel controlling the current. (The handwheel is later fitted to the spindle of the automatic device so that hand control of the current can be carried out if desired.)

Such a device has obvious advantages, for in manual arc welding the operator often has to alter the current to suit the varying requirements of the work. Production time is lost in going to the equipment to make adjustments; and it may happen that the first adjustment does not have the required value, so that a second one has to be made. There are, on the other hand, operators who, although not satisfied with the value of the current, nevertheless will use that supply as best they can, rather than spend more time in making fresh adjustments. Such procedure is not conducive to good welding and may result in unsatisfactory joints, with considerable loss in cutting out and making good.

An operator carrying out the work in the downhand position may find that he requires to continue in the vertical and overhead positions. If the equipment is some distance from the work which is being undertaken (as can easily happen in shipbuilding, constructional work, and boiler repairs) the cumulative loss of time in a 47-hour week may be considerable.

Supposing that an adjustment takes only three minutes and is necessary ten times a day, then about three hours a week are lost by each operator; in practice this loss may be considerably more, as the making of the adjustment frequently gives cause for other delays. The remote-control welding current regulator thus saves welding time, increases production, and helps to ensure better-quality welding.

By short-circuiting the electrode holder with earth, the current is reduced. If it is desired to increase the current, the electrode holder is momentarily short-circuited with earth, broken, and immediately short-circuited again. The timing may be likened to the "dash," in the Morse code, for lowering the current, and a "dot and dash" for raising it. In each case a "dead short" is made, but when desiring to reduce the current, the short-circuit is maintained, and after about 1½ seconds the control automatically turns towards minimum, and will continue to reduce the current as long as the short-circuit is maintained. As soon as the short-circuit is removed, the control stops moving and remains held at the new setting. Conversely, when wishing to increase the current, a fleeting "dead short" is made, followed by a long "dead short." After a lapse of about 1½ seconds the control automatically turns towards maximum and continues to raise the current as long as this second "dead short" is maintained. As before, the control stops and remains held at the new setting when the short-circuit is removed.



General view of portable motor-generator set, showing (on right) the control box with the Murex remote-control current regulator

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CONTROL OF ALUMINIUM AND LIGHT ALLOYS.—Government wartime control of the purchase of aluminium and light alloys was removed, with effect from August 1, under two orders made by the Ministry of Supply:—Control of Aluminium (No. 7) Order, 1946, and Light Metals & Alloys Fabrication (No. 2) (Revocation) Order, 1946. As the Ministry has made a contract for the supply of 215,000 metric tons of virgin aluminium from Canada during the years 1946-47 (announced on April 10) it will continue to be the sole buyer and seller of virgin aluminium. The Ministry also is cancelling directions previously issued to the light alloy industry requiring the segregation of light alloy scrap into various categories, and the making of statistical returns. Arrangements have been made for statistics to be furnished on a voluntary basis by the industry. Copies of the above Orders may be obtained from H.M. Stationery Office, York House, Kingsway, London, W.C.2, or through any bookseller, price 1d. each (S.R. & O., 1946, No. 1,269 and No. 1,270). Any inquiries should be made of the Light Metals Control, Ministry of Supply, Banbury.

SIMPLIFYING AIR TRAVEL FORMALITIES.—The Provisional International Air Transport Association has sent from Montreal to the association's 46 member Governments the full text of its recommendations for eliminating travel barriers and formalities. Among the recommendations for simplification of overseas travel requirements are the elimination of consular visas on general declarations and manifests; the authorisation of travel permits and identity cards to replace the complicated passport and visa formalities for passengers; and the issue of special crew-member certificates.

French Tunnel Measuring Car

A vehicle designed to make a continuous record with attachments for eliminating play on track and in axle boxes

IN our issue of January 28, 1944, we illustrated an inspection vehicle used on the New York Central lines for detecting any irregularities or obstructions in tunnel linings liable to foul the loading gauge or vehicle construction gauge. We have received from the Chief Engineer, Civil Engineering Section, of the South-Western Region of the French National Railways, details, already published by Monsieur Bouteloup in the *Revue Générale des Chemins de fer*, for January-February, 1942, of another type of inspection car.

The Castan Car

Known as the Castan car, from the name of its principal designer, Monsieur Castan, Technical Inspector in the South-Western Region, and used on the lines in that region, it is designed to provide a particularly accurate and continuous record of the conditions met with along a tunnel surface. Although chiefly for use in tunnels, of which there are no fewer than 500 in that region, totalling 200 km. (124 miles) in length, it can be used to record similar details at other parts of the line, as in cuttings, or alongside obstructions bordering the track.

Irregularities Recorded

It is a laborious process to take measurements in tunnels by ordinary means, and many hours would be involved in obtaining the particulars which such a vehicle can furnish more reliably in passing through a tunnel. The Castan car, in principle, is a development of a measuring device designed by a Monsieur Pichon and used on the former P.L.M. lines. Its object is to record, in correct relation to the distance run, the entire surface of the tunnel above the floor level of the inspection vehicle, so that an examination of the graphs produced will enable not only the size of any irregularity to be known to within 1 cm. (⅜ in.), but also the exact situation in the tunnel where it is encountered.

The car consists essentially of an inspection room, in which the recording apparatus is located, and a strong arch-shaped framework on which are mounted thirty "feelers" (palpeurs). These are arranged to bear against the tunnel wall and transmit their movements through Bowden wire connections to stylus pens marking a travelling paper record band. They represent, in their normal working position, a selected standard contour, which may vary from one part of a railway system to another, as, for example, between electrified and non-electrified sections. For the car now illustrated, was chosen a somewhat wide contour which covers the extreme gauge limit of the pantograph on the electrified lines.

The feelers consist of two platework arms carrying a roller between their outer ends and covered between them elsewhere with sheet metal to prevent an obstacle from catching in and damaging the device. The rollers are of varying sizes, some cylindrical, others conical, and there are three lengths of arm, the longest 1m. (3ft. 3⅜ in.) overall.

This and the middle-sized arm are of duralumin plate, and the smallest size, 0.8 m. (31½ in.) of steel plate. Each feeler is mounted on ball bearings and has at its base a cam arranged to bear on a small wheel. This is connected to a spring-loaded attachment at the end of the Bowden wire communicating with the apparatus room. The cam is shaped so as to transmit movement to the wire, at the ratio of 1 to 10, as the feeler is displaced by contact with the tunnel. An idle face on the cam allows the feelers to be turned clear to a normal position when the car is out of use.

Each feeler, when in service, is held in position by a spring, and, to prevent reversal in the event of any unexpected setting back it has a slight initial inclination towards the rear of the car. In this position it rests against an elastic stop piece. Most of the feelers cover a space of 25 cm. (10 in.), but those facing the haunch of the arch are slightly smaller. As seen in the second illustration on page 157, there are two ranges of feelers, the gap in the rear range being covered by those in the front, which also partly overlap the others. It has been found that signal wires and similar objects do not harm the equipment, and that the positions of their supports are clearly detected and recorded; overhead traction wires and their supports offer, however, some difficulty to the operation of the car. Current, of course, must be cut off, and the car has to be moved forward slowly, while some feelers are turned by hand clear of the obstacles formed by the contact wire supports. An alternative method which may be used is to fix some feelers clear at the outset.

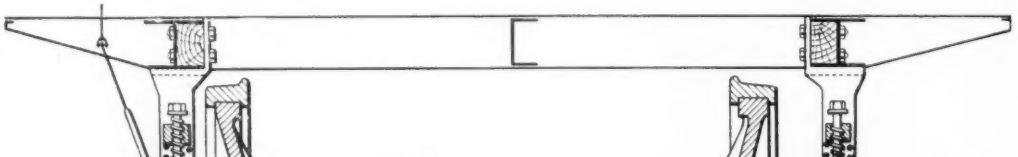
Economy in Labour

In spite of these difficulties the tunnel between the Austerlitz and Quai d'Orsay Stations in Paris was explored successfully throughout by the Castan apparatus. It duly recorded not only any narrowness of the arch, but also the various obstacles, exceptionally numerous in this case, which could not have been checked and recorded otherwise without a great expenditure of time and labour, difficult to arrange on so busy a section. Although the car moved at 2 km.p.h. (1¼ m.p.h.), it needed to operate for only five nights, at two hours a night, to obtain the record, whereas it took two draughtsmen, assisted by four platelayers, 20 nights to measure 50 cross-sections. On the Montauban to Brive section, 22 tunnels, covering 12 km. (7½ miles) were dealt with in 12 days; the working was in the intervals available.

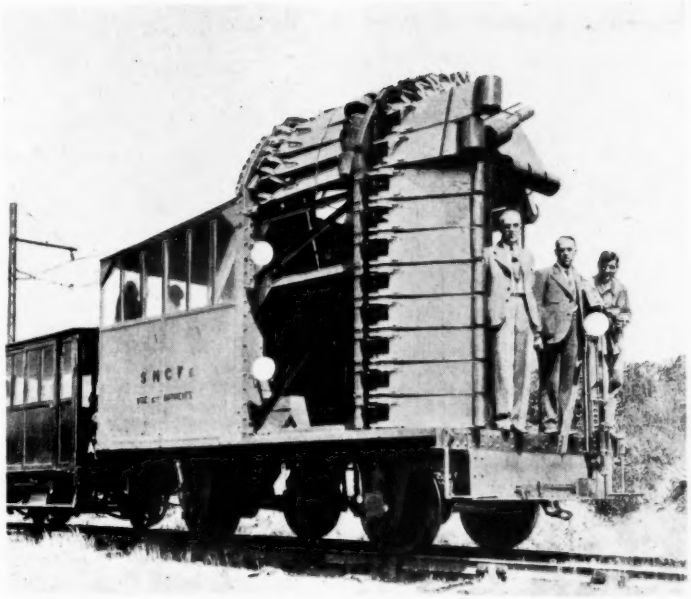
The Cabanes tunnel had been investigated by a draughtsman and four assistants, who worked on a stage mounted on a trolley. Sixty-six cross-sections were taken, and the operation took 7 nights, with 4 days office work. Even then it was not certain that the narrowest part of the tunnel had been ascertained. This tunnel and two others were later explored and recorded by the Castan car in 5½ hr., and the examination of the results occupied only a day.

The Recording Apparatus

The recording apparatus consists of a broad moving paper band, 62 cm. (24 in. wide) as used in dynamometer and other test-car work, marked by 45 recording pens—30 of which are actuated by the feelers—using 5 colours of ink. Running in guides, the Bowden wires are attached



Arrangement of the telescopic axle and springing fitted at the rear of the Castan car. Details of the axle are given on the opposite page



Castan tunnel-inspection car, showing feelers fixed back out of service

to the pen carriers, and controlled by an adjustable spring tension device. The pens belonging to each zone or group of feelers are mounted on the same line at right angles to the travel of the paper.

The 15 fixed pens mark in black parallel lines at intervals across the record, to serve as base or reference lines. Red, violet, green, and blue are used for the actual recording. The paper advances with the movement of the car; the drive is taken off the axle through a 2-speed gear, which gives either 2 or 5 metres (about 6 ft. 7 in. or 16 ft. 5 in.) travel of paper per km. ($\frac{3}{8}$ mile) traversed. The movement of the paper can be stopped also at will without having to disconnect the drive. The apparatus is contained in a suitable glazed compartment, in which the staff on the car travels.

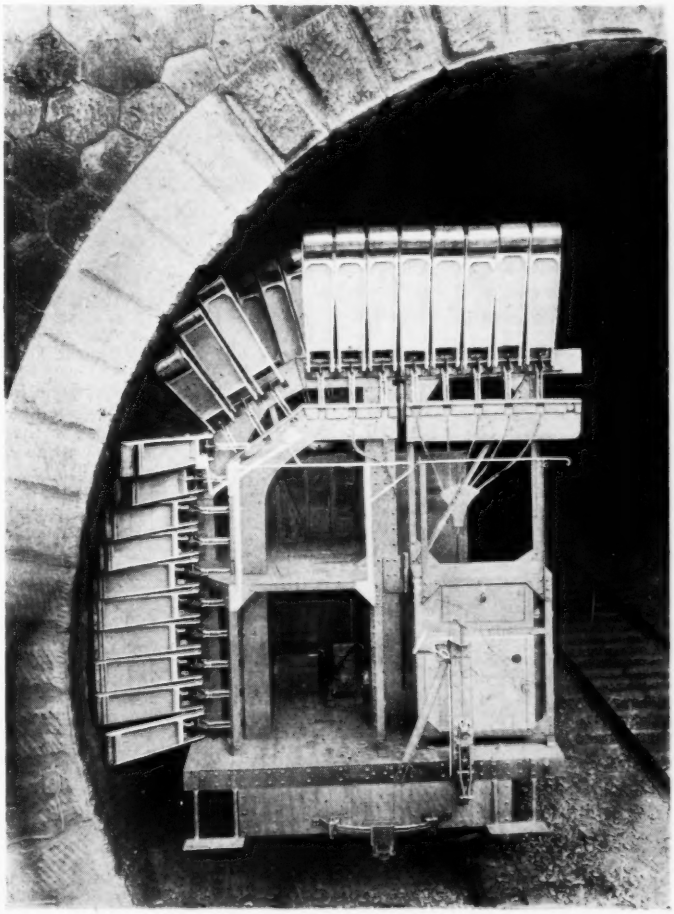
The Telescopic Axle

Records taken in this way must be accurate to be serviceable. The Castan apparatus is designed, as stated, to detect the tunnel wall to within a maximum allowance of $\frac{1}{8}$ in. To do so, the rear axle of the vehicle has been made telescopic, as seen in the drawing on the opposite page, and its wheels have been given cylindrical tyres. The offside wheel is kept pressed towards the rail, so that all play is taken up; and the near side wheel is given the smallest possible play with respect to the vehicle itself. Thus the feelers are kept constantly in the same position in relation to the adjacent tunnel wall, and all movement transverse to the track is eliminated. Care has to be taken in passing over points and crossings, and a special bridge piece, carried for use at such locations, enables them to be negotiated safely.

A locking device is provided, to suppress the telescopic action and keep the wheels strictly to gauge when the vehicle has to run out of service. The axle boxes have roller bearings and there is a screw attachment, which passes through an additional cross-member in the horn blocks. By this means the floor of the vehicle, which is solidly constructed and braced, can be made to rest directly on the axle boxes; the spring suspension is suppressed and unable to influence the position of the feelers. The front axle is of the usual construction. When its special features are out of action the rear axle resembles the front axle, and after the feelers have been secured clear, the vehicle is allowed to travel at speeds up to 40 km.p.h. (25 m.p.h.), the maximum for those of this class. It has travelled in fact some 6,000 km. (3,728 miles) without incident. It carries a 600-watt petrol generating set, and a 24-volt accumulator battery, the regulation head and tail lights, with 7 projector lamps mounted on the main framing and one carried in the recording room for illuminating the portion of the tunnel under immediate observation.

The usual process is to make an exploratory trip, transfer the results of any irregularity appearing in the record to a drawing and obtain a suitable cross-section. If, in consequence, it is desired to inspect the spot more closely, the vehicle can be taken back and the tunnel arch measured in close detail.

The Castan car was constructed at the Bordeaux Permanent Way Shops, under the Assistant Engineer, Monsieur Marquet, and improved later at the Brive works. Messieurs Place and Bohl, of the Office Centrale d'Etudes du Matériel, were responsible for the recording table and telescopic axle details.



Castan car at entrance to tunnel, showing feelers in operative position

New Saginaw River Bridge, U.S.A.

Built on a new alignment, this bridge on the Pere Marquette Railway, having a bascule span of unusual type, replaces the old structure and its swing span

THE usual story of heavier traffic and increased train loads and engine weights recently caused the Pere Marquette Railway administration to bring a number of bridges on the system up to E.72 loading, among them the Saginaw River Bridge in Michigan. As the old bridge over this river had a swing span, dating from 1893, which, as well as being weak, provided two clear navigation channels each about 65 ft. wide only, it was decided that this span must be scrapped and replaced by some other form of opening span that would give a much wider waterway. The remainder of the old bridge, however, consisted of three through lattice girder spans, 106 ft. 10 in., 111 ft. 6 in., and 125 ft. 9 in. long respectively, and some small approach spans, the lattice spans being up to E.72 standard of loading. These spans were fabricated by the American Bridge Company in 1923.

Bascule span under erection. Note the two temporary tie members holding it in a nearly vertical position, but subsequently removed

In order to replace the swing span with a new opening span, it was necessary to rebuild on a new alignment, but it was decided to retain the three lattice spans in the new structure. In the selection of an opening span two considerations weighed heavily in favour of the American Bridge Company or Abt-type bascule, namely, its adaptability for erection in the raised position without hindrance to navigation, and the fact that the counterweight is uniformly effective at all stages of the process of opening, and may be mounted farther back on the abutment and away from the bridge leaf. It was, therefore, decided to use this in preference to any other type of opening span at the Saginaw River.

The contract for the fabrication and erection of the steel superstructure of the new bridge was let to the American Bridge Company. The structure consists of one 172-ft. bascule span with a tower span of 82 ft. 4 in., the three through truss spans, transferred from the old bridge, and two new 62-ft. 3-in. plate-girder deck spans. The overall length between abutment back walls is 730 ft. 7 in. and the bridge is built on an alignment parallel to and 37 ft. downstream from the old bridge.

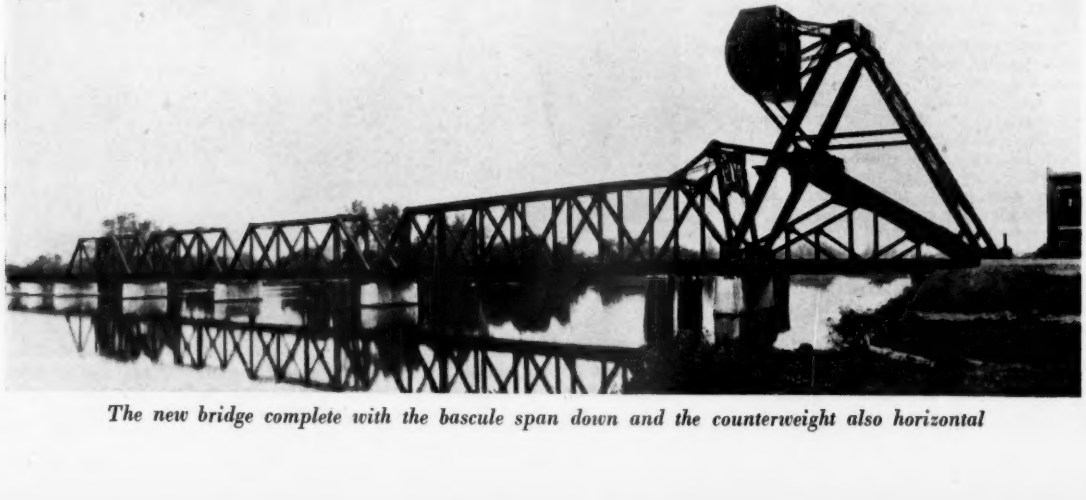
To erect the bascule span in the raised position, two temporary tie members were inserted between the apex of the A-frame tower and the third panel point of the top chord of the span; these are clearly shown in the accompanying illustration of the span under erection. By comparing this illustration with the one below depicting the completed bridge (with the bascule span lowered) it will be seen that the uniformity of action of the counterweight is secured by a system of links connecting the top chord of the span and the counterweight to an inclined slide in such a way that when the span is horizontal the counterweight is also horizontal about its trunnions at the apex of the tower; and when the span is nearly vertical the counterweight is correspondingly nearly vertically below the trunnions.

Rolling 470-ton Span to New Site

However, the interest in erection is not limited to the bascule span. The transfer of the three through lattice spans from the old to the new site presented a special problem. The new bridge was first completed with the exception of these three spans, but meanwhile they had been temporarily connected up end-on to form a 344-ft. continuous span weighing 470 tons. When all was ready, the track on this continuous span was cut after the passage of a train, and—as the new piers were not directly opposite the old ones—the span was rolled diagonally on steel falsework across the intervening 37 ft. (measured on the square) between the old and new alignments; the contractor's standard shoes and small rollers were used for this operation. On arrival on its new centre line, the continuous span was linked up with the rest of the track on the new bridge, which was then ready for service with an interruption of traffic of only 14 hr. duration. The old swing span was subsequently dismantled and cut up for scrap.

The job entailed the fabrication of 710 tons of new steelwork and the erection of 1,247 tons of steelwork and other materials, including machinery, counterweight, operator's house, and electrical equipment.

PORTUGUESE ELECTRICAL CONTRACT.—A British group consisting of the English Electric Export & Trading Co. Ltd. and the Metropolitan-Vickers Electrical Export Co. Ltd. has negotiated to the order of Hidro-Electrica do Zezere, Lisbon, a contract of about £1 million for the equipment of a power station of 200,000 h.p. The station will supply Central Portugal and greatly assist in the development of Portugal's industrial resources.



The new bridge complete with the bascule span down and the counterweight also horizontal

RAILWAY NEWS SECTION

PERSONAL

Lord Inman has accepted the invitation of the Secretary for Overseas Trade to be his Principal Adviser in the establishment of the new non-governmental organisation for the development of the catering, holiday and tourist services. Mr. A. Mullins, Comptroller-General, Export Promotion Department, Board of Trade, has been posted to special duties in connection with the development of the tourist trade. Mr. A. E. Welch, of the Commercial Relations & Treaties Department, has been appointed Under-Secretary in charge of the Export Promotion Department, in succession to Mr. Mullins.

Mr. G. C. Brighten, who, as recorded in our July 12 issue, has been appointed London Stores & Shipping Superintendent, Central Argentine Railway, joined the Stores Department of that company in 1909. He was appointed Assistant Stores & Shipping Superintendent, London, in 1934, and now becomes London Stores & Shipping Superintendent, on the recent retirement of Mr. Vincent H. Drewry, who held that position both for the Central Argentine and for the Buenos Ayres Great Southern and Western Railways. During the war of 1914-18 Mr. Brighten served with the Honourable Artillery Company, and in the recent war with the L.D.V. and Home Guard.

Mr. G. C. Brighten

Appointed London Stores & Shipping Superintendent, Central Argentine Railway

L.N.E.R. Assistant General Manager (Staff)

The L.N.E.R. announces that Mr. H. H. Halliday, Principal Assistant (Staff), has been appointed Assistant General Manager (Staff), in succession to Mr. Kenelm Kerr, who has retired.

C.N.R. European Traffic Manager

Mr. James B. Thom has been appointed European Traffic Manager in London, Canadian National Railways.

Indian Railway Staff Change

Mr. P. M. H. Rao has been appointed Financial Adviser & Chief Accounts Officer, N.W.R.

London Passenger Transport Board

The Minister of Transport has been informed by the Appointing Trustees acting under the provisions of section 1 of the London Passenger Transport Act, 1933, that, to fill vacancies caused by the resignations of Sir Gilfrid Craig and Sir Geoffrey Vickers, V.C., they have appointed Sir Edward Hardy and Mr. William B. Neville to be Members of the London Passenger Transport Board for three years and five years, respectively. Sir Edward Hardy has been a member of the Kent County Council since 1925 and Chairman since 1936. He is Deputy-Chairman, Kent War Agricultural Executive Committee. Mr. Neville has been General Manager of the London Co-operative Society since 1937. He has served on a number of important Government committees, and is Deputy-Chairman, Public Works Loans Board.

Mr. Stanley J. Payne

Appointed London Stores & Shipping Superintendent, Buenos Ayres Great Southern and Western Railways

Mr. Stanley J. Payne, who, as recorded in our July 12 issue, has been appointed London Stores & Shipping Superintendent, Buenos Ayres Great Southern and Buenos Ayres Western Railways, joined the Stores Department of the B.A.G.S.R. in 1909. He visited Argentina in 1936, and on return was appointed Assistant Stores & Shipping Superintendent, London, of the B.A.G.S.R. and B.A.W.R. He was appointed London Stores & Shipping Superintendent of those two companies on the recent retirement of Mr. Vincent H. Drewry. Mr. Payne served throughout the 1914-18 war in King Edward's Horse and the Royal Flying Corps; and he was a member of the L.D.V. and Home Guard during the recent war.

Institute of Transport

The undernamed have been elected Ordinary Members of the Council of the Institute of Transport, and will take office on October 1:—Nine Members: Messrs. W. F. French (Managing Director, United Service Transport Co. Ltd.), H. Howells (Chief Statistics Officer, Birmingham & Midland Motor Omnibus Co. Ltd.), G. Leedam (Secretary & Manager, Cheshire Lines Committee), R. McLeod (Transport Manager, City & Royal Burgh of Edinburgh), Sir Charles H. Newton (Chief General Manager, L.N.E.R.), Messrs. A. J. Pearson (Assistant to President, L.M.S.R.), H. Rudgard (Superintendent of Motive Power, L.M.S.R.), H. A. Short (Deputy Traffic Manager, Southern Railway), B. G. Turner (Managing Director, Thomas Allen Limited); one Associate Member: Mr. W. Bray (Load Control Superintendent, British Overseas Airways Corporation).

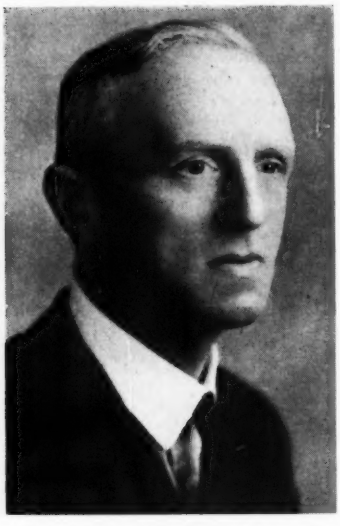
Mr. V. Z. de Ferranti has been elected President of the Institution of Electrical Engineers from October 1 next.

Mr. Kenneth Cole, who, as recorded in our August 2 issue, has been appointed Stores Superintendent, London, Buenos Ayres & Pacific Railway, in succession to Mr. W. C. Cocksedge, who has retired, has been in the company's service since 1907, and has visited Argentina on two occasions. Mr. Cole served with the Royal Scots during the war of 1914-18, and was commissioned in the Home Guard during the recent war.

Mr. Kenneth Cole

Appointed Stores Superintendent, London, Buenos Ayres & Pacific Railway

The King at Buckingham Palace on July 23 conferred the honour of knighthood on:—Mr. William Raymond Fitzgerald, lately General Manager, Bengal-Nagpur Railway; Mr. Alexander Lowe McColl, Chairman, Lubricating Oil Committee, Petroleum Board. Chairman, Superheater Co. Ltd.; Mr. Everard Charles Lindley Meynell, O.B.E., M.C., British resident in Buenos Aires. Member of local committees in Argentina of Buenos Ayres Great Southern Railway Co. Ltd., and Buenos Ayres Western Railway Limited; Dr. Clifford Copland Paterson, O.B.E., D.Sc., M.Inst.C.E. M.I.E.E., F.R.S., Director, Research Laboratories, General Electric Co. Ltd., Wembley; Mr. Harold Leonard Saunders, Comptroller-General, Patent Office; Mr. Arthur John Griffiths Smout, Director-General, Ammunition Production, Ministry of Supply. Director, Imperial Chemical Industries Limited. His Majesty's approval of these knighthoods was signified on June 13, 1946.



Mr. John Blundell

Appointed District Locomotive Superintendent, Peterborough, L.N.E.R.

Lt.-Colonel K. A. Fraser

Appointed Deputy Chief Civil Engineer, Department of Railways, New South Wales

Mr. R. W. J. Mackay

Appointed Chief Assistant Electrical Engineer, Department of Railways, New South Wales

Mr. John Blundell, M.I.Mech.E., M.I.Loco.E., who, as recorded in our July 5 issue, has been appointed District Locomotive Superintendent, Peterborough, L.N.E.R., was born on November 14, 1897. His father was Mr. Harry Blundell, formerly Chief Engineer, Great Central Railway, who retired in 1922. Mr. John Blundell was educated at Birkenhead Grammar School and Sedbergh School. After active service between 1916 and 1919, he joined the Great Central Railway as special apprentice at Gorton Works. He was appointed Assistant to District Locomotive Superintendent, Sheffield, in 1922, and to similar posts at Wrexham, 1923, Stockport (Heaton Mersey), 1924, and Neasden, 1926. In 1929 he became Locomotive Depot Superintendent, Bradford, and in 1938 Locomotive Depot Superintendent, March. Mr. Blundell joined the Supplementary Reserve in 1927 as Second Lieutenant, No. 1 (L.N.E.) Railway Operating Company, R.E., and was called up for service in August, 1939, as Captain, 2nd in command of 153 (L.N.E.) Railway Operating Company, R.E. After varied service at home and overseas, he was posted as Chief Instructor, Transportation Training Centre, R.E., Longmoor, in April, 1944. He was demobilised early this year with the rank of Lt.-Colonel, and rejoined the L.N.E.R. in his former position at March, which he now relinquishes to take up his new duties.

Lt.-Colonel K. A. Fraser, O.B.E., Assistant Chief Civil Engineer, Construction, Department of Railways, New South Wales, who has been appointed Deputy Chief Civil Engineer, was born in 1893. He entered the railway service in 1911 as a cadet, and was employed on deviation and duplication works. He enlisted for active service in January, 1915, and served three years in France with the 12th Field Company (Engineers) as Lieutenant. In 1922 he was appointed Resident Engineer for the Sydney City Underground Railway, and supervised the construction of the four existing underground stations. After a period as Resident Engineer, Maintenance, he was appointed, in 1938, Supervising Engineer, Construction, to commence work on the construction of the new Hawkesbury River Bridge. In May, 1940, he enlisted in the 2nd A.I.F. and was appointed to command the Railway Construction Group overseas, which group carried out important railway work in the Middle East. For that work Colonel Fraser was awarded the O.B.E. and mentioned in despatches. On his return to the Department of Railways in 1943, he resumed in his previous capacity, and had the supervision of all construction work being carried out by the department. In 1945 he was appointed Assistant Chief Civil Engineer, Construction.

Mr. R. W. J. Mackay, B.Sc., M.Eng., B.Econ., A.M.I.E.E., M.I.E. (Australia), who has been appointed Chief Assistant Electrical Engineer, Department of Railways, New South Wales, was trained at Sydney University, where he graduated in mechanical and electrical engineering with first class honours and University Medal in 1923. After a period in commerce he was appointed Walter & Eliza Hall Travelling Fellow with the Peter Nicol Russell Medal for Post-Graduate Research, and spent two years in the United States, England and Europe, studying engineering. He joined the New South Wales Government Railways in 1929, and dealt mainly with technical and electrical problems. Until his recent appointment he has been Assistant Electrical Engineer. Mr. Mackay is an Associate Member of the American Institute of Electrical Engineers and of the Institute of Public Administration. He is a Councillor of the Institution of Engineers (Australia), a Member of Council of the Standards Association of Australia, and Honorary Lecturer in Engineering in the University of Sydney.

Elliott [*& Fry*

The late Mr. S. H. Whitelegg

Formerly Works Superintendent, St. Rollox, who retired from L.M.S.R. service in 1943

We regret to record the death on August 2, aged 64, of Mr. S. Herbert Whitelegg, M.I.Mech.E., M.I.Loco.E., formerly Works Superintendent, St. Rollox, who retired from the L.M.S.R. service in 1943. He joined the London Tilbury & Southend Railway in 1900, and later became Works Manager, Plaistow, and afterwards Resident Mechanical Engineer, Tilbury Section, Midland Railway. When it was decided to merge the works of the London Tilbury & Southend and North London Railways and concentrate at Bow, he was appointed Resident Mechanical Engineer, Bow, to supervise that work under the late Sir Henry Fowler. He remained there until 1928, when he was appointed Works Manager of the locomotive works at Horwich; during his period there he was transferred to Derby, where he was resident for approximately two years in connection with various investigation committees of which he was a member. In 1937 he was appointed Works Superintendent for Locomotives, Carriages & Wagons at St. Rollox, where he remained until July, 1940, when he was given leave of absence to join the Ministry of Supply. He retired from L.M.S.R. service in 1943. Mr. Whitelegg was the second son of Mr. Thomas Whitelegg, at one time Locomotive Superintendent, London Tilbury & Southend Railway, and the younger brother of Mr. R. H. Whitelegg, who succeeded his father as Locomotive

Superintendent, L.T.S.R., and was later appointed Chief Mechanical Engineer, Glasgow & South Western Railway.

The King has awarded the Imperial Service Medal to nine employees of the Department of Railways, New South Wales.

Sir Leslie Boyce (Chairman of the Gloucester Railway Carriage & Wagon Company Limited) will lead the United Kingdom Trade Mission which the Government intends to send to China in the early autumn. The other members will be Messrs. F. A. Bristow (foodstuffs), D. Maxwell Buist (heavy electrical industries), A. H. Carmichael (light engineering), Roger Heyworth (general merchanting), H. D. Morgan (consulting engineer), and F. S. Winterbottom (textiles). A trade union representative also will be chosen. The Secretary to the mission will be Mr. G. B. Blaker of the Board of Trade.

The Government is releasing Sir Percy Mills, at his own request, from his appointment as President, Economic Sub-Commission, Control Commission for Germany, so that he may return to his business. Sir Cecil M. Weir has been appointed in his place and will take up his new duties on September 1; he has been released from his duties at the Board of Trade.

Mr. G. E. C. Pedler, Superintendent of the Turbine Section of the Construction Department of the British Thomson-Houston Co. Ltd., has retired after nearly 44 years' service with the company. He was appointed in 1925 to the position he now vacates. Mr. Pedler's successor as Acting Superintendent of the Turbine Section of the Construction Department is Mr. J. Ashton, his chief assistant for 21 years.

Mr. W. L. Lentz has been elected Vice-President in charge of Manufacturing of the Montreal Locomotive Works Limited. Mr. W. M. Townsend has been elected Vice-President, and Mr. J. D. Vaughan a Director. Mr. Lentz is also Vice-President in charge of Manufacturing, and Mr. Vaughan, Comptroller, of the American Locomotive Company.

CANADIAN PACIFIC RAILWAY

Mr. D. L. Howard, Assistant Manager of the C.P.R. Communications Department for Western Lines at Winnipeg since 1942, has been appointed Assistant General Manager at Head Office, Montreal, succeeding Mr. W. M. Thompson, who is retiring.

Mr. G. H. Pescud, Superintendent of Communications for the Saskatchewan District, succeeds Mr. D. L. Howard at Winnipeg, with the new title of General Superintendent of Communications, Western Lines. The title of Mr. P. G. McLean, Assistant Manager for Eastern Lines at Montreal, becomes General Superintendent of Communications, Eastern Lines, to conform with the change.

Mr. A. J. Kidd, Assistant Signal Engineer for Eastern Lines at Toronto, has been appointed Signal Engineer, Eastern Lines, Toronto, and Mr. R. I. Becksted, Signal Supervisor for the Ontario District, succeeds Mr. Kidd as Assistant Signal Engineer, Eastern Lines.

Mr. John A. Shaw, General Electrical Engineer for 31 years, has retired, and is succeeded by Mr. J. W. Hughes, Electrical Engineer for Eastern Lines at Toronto.

Accidents on British Railways, 1945

The annual report* for 1945 of the Chief Inspecting Officer of Railways shows that during the year 45 passengers were killed in train accidents. These occurred at Esher (1), Bourne End (41), and Northwood (3). Seventeen railway servants also lost their lives in nine accidents. Train accidents of all kinds resulting in more than 3 hr. delay numbered 363, of which 155 were caused by human failure, and 133 by defective rolling stock, track, or apparatus. The liability to casualty among passengers was one killed in some 43 millions carried, and among railway servants one fatality in about 23 million passenger and freight-train miles worked.

In accidents connected with the movement of railway vehicles, exclusive of train accidents, 89 passengers were killed, as compared with an average of 111 for the period 1940-45. Of this total, 67 fatalities occurred in falling from platforms and trains, and when entering or alighting from trains, as compared with 89 in 1944, and the annual average of 80 during 1940-45. It is stated that these accidents were due largely to misadventure or were caused by want of caution on the part of passengers themselves.

There were 163 fatalities among railway servants (four of them women) in movement and non-movement accidents, as compared with 292 (nine women) in 1944, and with the average of 288 for the 6-year period 1940-45. Of the total, 53 were killed while working on the line, and 107 while walking or standing on the line. Special attention is drawn to the latter figure, 21 more than in 1944, as the worst feature in the year's record. The report states that speeds will tend to rise, and it is a very serious matter that the majority of these accidents resulted from want of individual caution, momentary thoughtlessness, and disobedience of safety rules.

The report refers to the many operating difficulties that remained after the cessation of hostilities, the most serious being shortage of experienced staff. The return of men on demobilisation had made little headway by the winter, and there was abnormal sickness and some absenteeism, due largely to the strain of working long hours during the war. Shortage of skilled staff and materials also prevented the overtaking of arrears of maintenance of rolling stock, permanent-way and signalling, thus increasing failures in traffic, accentuating congestion and delay, and in some cases causing accident.

At the same time, passenger travel, as represented by journeys, was 4.3 per cent. greater than in 1944, and 11.8 per cent. greater than in 1938. There was much overcrowding on main-line and suburban trains, and a considerable increase in the average length of passenger journeys. While the larger volume was conveyed by about 24 per cent. fewer loaded passenger train-miles than in 1938, it is estimated that passenger-miles increased by no less than 79 per cent., as compared with the 12 months ended August, 1939. In addition, freight train-mileage continued much above pre-war level, and although there was a gradual reduction in movement for the Services after the end of the war in Europe, net ton-miles were 35 per cent. more than in 1938, or, on the average, nearly 16 millions more per day.

Total fatalities were 436 in all movement on rail during 1945; this was the lowest recorded for the six years 1940-45, and 19 per cent. less than the peak in 1941.

The Chief Inspecting Officer expresses surprise that the number was not greater, having regard to the traffic handled and the strain of wartime conditions and difficulties. He adds that the fatalities (75) in train accidents, when analysed, afford no justification for thinking that the high standard of safety has been impaired; nor as regards the run of exceptional train accidents early in 1946 is there any indication of some general and remediable cause.

The report concludes by stating that the war and its aftermath are still affecting operation and that it will be some years before the heavy accumulation of renewals of track and rolling stock can be overtaken, particularly if the present shortages of materials persist. But there is little doubt that the high standards of efficiency and safety at which the railways entered the war, and which were so well maintained throughout the six years, will be still further improved as conditions become more settled.

Moreover, the opportunities which are gradually becoming available for effecting improvements and bringing into use additional safeguards should produce substantial results in the next few years.

* "Report to the Minister of Transport upon the Accidents which Occurred on the Railways of Great Britain during the Year 1945." H.M. Stationery Office, price 6d.

Buffer-Stop Collision at Edgware, L.P.T.B.

An inquiry was opened in London on August 2 by Sir Alan Mount, Chief Inspecting Officer of Railways, Ministry of Transport, into the accident at Edgware Station, London Transport, on July 27, when a tube train ran into the buffer stops. As reported in our August 2 issue, it was stated at the inquest on the motorman that he had died of heart disease while at the controls of the train.

Mr. A. J. Webb, Traffic Department Superintendent, London Transport, said that the doctor could not say whether the motorman was dead or unconscious before the collision took place. He was, however, in the act of dying. He had been medically examined for promotion in February and was found to have a clean bill of health. His heart showed no abnormality.

Dr. T. Morton, Medical Officer to the Board, said the motorman died from a clot of blood forming in one of the big arteries supplying the heart wall. The trouble was one which it was impossible to detect in a clinical examination without any complaint being made by the patient. Dr. Morton said one would expect in such a case a convulsive movement or a muscle splash that would cause a man to clutch strongly at anything his hands were on without being aware of what he was doing.

The Relief Stationmaster at Edgware said he went to the driver's cabin immediately the crash occurred. He felt the motorman's pulse and thought he was still alive at the time he sent for an ambulance. The signalman at Edgware said the train was travelling at 5 to 10 m.p.h. past his box.

Sir Alan Mount said that this extremely rare case seemed to turn on how the dead man's handle did not operate.

XUM

Staff & Labour Matters

Railway Staff Returns

The Ministry of Transport has published in a White Paper ("Railways Staff Return," H.M. Stationery Office, price 1d.) particulars of the numbers and average weekly earnings of staff employed by the railway companies of Great Britain, the railways of the London Passenger Transport Board, and the Railway Clearing House for the years 1939 to 1945.

This is the first census of a staff to be published by the Ministry since 1938, and, although the return gives much less information than was contained in the White Papers published before the war, it enables readily to be seen the trends both in respect of employment and earnings of railway employees during the war years.

The whole of the information relates to one week in March each year, and a table showing the number of staff employed gives the following particulars:—

Year	Men	Youths and boys	Women	Girls	Total
1939 ...	527,929	35,335	23,553	1,700	588,517
1940 ...	522,311	35,400	23,489	2,427	583,627
1941 ...	509,369	37,661	36,733	4,101	587,864
1942 ...	492,834	32,814	67,574	6,386	599,608
1943 ...	491,928	32,204	81,850	6,614	612,596
1944 ...	492,867	30,572	86,955	6,362	616,756
1945 ...	499,770	31,292	85,473	5,834	622,369

The above figures represent the numbers of staff receiving salaries or wages for the full week combined with the equivalent number of full-time workers where employees were paid for less than a complete week. The table reflects the progressive reduction in the numbers of male staff employed, and the increase in the female staff recruited under the dilution agreements to replace men released for the Forces and transferred to other railway duties.

A further table gives particulars of the numbers of staff of both sexes employed each year in each of the principal grades. Below is an extract from the table:—

Grade classification number		1939	1941	1943	1945
1	Capstanmen	1,127	1,052	939	875
2	Carters and van guards	24,098	23,161	22,140	21,216
3	Carriage cleaners	7,099	6,427	6,541	6,789
4	Carriage and wagon examiners	4,226	4,264	4,251	4,253
5	Carriage and wagon oilers and greasers	1,784	1,661	1,582	1,772
6	Checkers	8,788	9,721	10,065	10,156
7	Cranemen	538	546	626	737
8	Crossing keepers	2,881	2,875	2,876	2,910
9	Engine cleaners	6,629	5,255	5,700	5,772
10	Engine drivers and motormen	35,472	39,086	41,954	44,151
11	Firemen and assistant motormen	32,040	35,279	37,710	39,458
12	Foremen and chargemen	7,037	7,259	7,639	7,754
13	Guards—goods	13,948	16,229	18,201	18,490
14	Guards—passenger	7,597	7,228	7,066	7,181
15	Hydraulic and pumping engine staff	789	734	738	691
16	Labourers	24,581	21,204	23,876	25,059
17	Lampmen	1,711	1,493	1,454	1,426
18	Loaders, callers off, ropers and sheeters	5,553	5,932	5,913	6,107
19	Locomotive shed staff (excluding labourers)	8,601	8,721	9,830	10,869
20	Messengers	949	942	996	929
21	Number takers	1,908	2,117	1,919	1,937
22	Officers and clerical staff	74,603	74,824	76,190	73,420
23	Permanent way men	56,589	51,815	49,234	49,643
24	Pointsmen	279	253	268	269
25	Police staff—supervisory grades	480	551	611	652
26	Police staff—other grades	1,865	2,753	3,233	4,078
27	Porters—goods	13,005	17,987	18,919	18,716
28	Porters—passenger	24,651	26,526	27,519	29,434
29	Porter guards	564	539	571	520
30	Porter signalmen	2,147	1,781	1,712	1,602
31	Shop and artisan staff—supervisory grades	2,890	3,125	2,901	2,969
32	Shop and artisan staff—other grades (excluding labourers and watchmen)	92,082	86,779	97,732	96,320
33	Shunters	16,692	17,829	18,207	18,741
34	Shunt horse drivers	226	188	158	156
35	Signal and telegraph men	6,563	6,415	6,310	7,257
36	Signalmen	24,157	24,188	24,775	24,540
37	Signal box lads	1,461	1,522	1,659	1,818
38	Stationmasters, yardmasters, etc.	5,308	5,281	5,343	5,418
39	Supervisory staff (other than shop and artisan and police)	9,771	10,050	10,706	11,401
40	Technical staff	3,663	3,089	3,701	3,655
41	Ticket collectors	3,696	3,671	3,893	4,297
42	Traffic control staff	1,563	1,802	2,079	2,219
43	Watchmen	394	608	624	515
44	Miscellaneous grades	14,712	16,375	14,176	14,184
—	Ancillary businesses	33,800	28,727	30,049	32,013
	Total staff	588,517	587,864	612,596	622,369

An analysis of the numbers of women and girls employed in the main groups of staff is as follows:—

Year	Clerical, etc.	Conciliation	Shop and artisan	Miscellaneous	Ancillary
Women—					
1939 ...	11,226	—	635	6,126	5,566
1940 ...	11,642	—	591	5,941	5,315
1941 ...	14,778	9,071	1,806	5,363	5,715
1942 ...	23,763	23,242	8,669	5,622	6,278
1943 ...	26,624	31,109	11,943	5,768	6,406
1944 ...	26,965	34,865	12,394	6,167	6,464
1945 ...	27,536	34,545	10,302	6,494	6,596
Girls—					
1939 ...	1,003	—	355	34	308
1940 ...	1,730	—	293	56	348
1941 ...	2,817	189	542	100	453
1942 ...	2,902	1,013	1,805	110	556
1943 ...	2,667	1,171	1,990	171	615
1944 ...	2,676	1,228	1,582	245	631
1945 ...	2,758	1,067	1,053	296	660

A table giving particulars of the average earnings in each of the years for the main group of staff is included in the return, which reveals that the average earnings in 1945 for all sections of staff were considerably in excess of those in 1939. The following are some of the figures quoted for the wages grades:—

Year	Men	Youths and boys	Women	Girls
	s. d.	s. d.	s. d.	s. d.
1939 ...	68 9	28 10	†	†
1940 ...	79 8	30 11	†	†
1941* ...	88 2	33 6	51 6	28 3
1942 ...	96 2	35 10	63 1	40 2
1943 ...	105 5	38 6	64 2	47 5
1944 ...	114 0	40 4	79 8	50 2
1945 ...	116 10	42 3	82 8	48 8

* The average earnings shown do not include the effect of an increase in war advance of 4s. per week for men with proportionate increases for women and juniors which was granted subsequent to the week in respect of which the return was made with retrospective effect

† The number employed was insufficient to provide a satisfactory basis for averages

In compiling the average earnings, workpeople who were receiving full or partial board and lodgings in addition to cash wages, and women and girls employed on a part-time basis as crossing keepers, waiting room attendants, lavatory attendants, office cleaners, and so on, have been excluded.

The earnings shown include war bonus, etc., piecework payments and tonnage bonus, payments for overtime, Sunday duty and night duty, and all other payments for work performed, but exclude travelling and out-of-pocket expenses and meal and lodging allowances.

All workpeople paid at adult rates have been classified as men and women, and those paid at junior rates have been classified as youths and boys, or as girls.

Separate figures are given for each of the main groups of staff; the average weekly earnings for men were as follow:—

Year	Conciliation staff	Shop and artisan staff	Other wages staff	Salaried staff—clerks, supervisors, etc.
	s. d.	s. d.	s. d.	s. d.
1939 ...	67 8	71 3	72 8	93 3
1940 ...	78 7	81 11	84 11	102 4
1941* ...	84 2	100 4	92 9	109 6
1942 ...	90 9	113 6	99 3	115 8
1943 ...	98 9	124 8	113 11	127 10
1944 ...	107 3	132 8	127 7	138 7
1945 ...	111 3	131 7	131 1	143 6

* See footnote to previous table

The average earnings shown do not, of course, include the increases in war advance and standard rates of pay which took effect from July 30, 1945, and ranged from 7s. to about 10s. or 11s. per week for men.

The total salaries and wages paid in each of the years are shown in the return as follow:—

	£
1938	109,419,844
1939	110,034,117
1940	127,477,907
1941	140,302,519
1942	153,249,325
1943	169,920,243
1944	180,828,478

Further staff details have been given recently in replies to Questions in Parliament (see page 163) and the subject of staff statistics in recent years is dealt with in an editorial article this week.

Questions in Parliament

London-Durham Train Service

Mr. C. F. Grey (Durham—Lab.) on July 25 asked the Minister of Transport if he would arrange for the 5.30 Kings Cross train to Newcastle to stop at Durham, as had been the case up till 1939, and so help the many people of Durham who often made their journey from London.

Mr. G. R. Strauss (Parliamentary Secretary, Ministry of Transport) stated in a written reply: I am making inquiries on this subject and will arrange for a statement to be circulated as soon as possible.

All-Steel Railway Wagon Design

Lt.-Colonel G. M. Sharp (Spen Valley—Lab.) on July 23 asked the Minister of Transport who was responsible for the new design of the 16-ton all-steel mineral wagon; whether he was aware that railway-wagon builders were being presented with specifications in which they had taken no part in preparation and which would result in an unnecessary cost of upwards of £15 a wagon; and whether, in the interest of public economy, he would institute an inquiry with the object of ensuring that the standards adopted were the best and most economical.

Mr. Alfred Barnes (Minister of Transport), in a written answer, stated: The design was prepared by the railway companies for the construction of their own wagons, and was adopted as being the most suitable for general use throughout the country. The cost of production is largely determined by the methods of construc-

tion employed, and I cannot accept the suggestion that the specification involves an unnecessary cost of upwards of £15 a wagon. I see no reason for instituting an inquiry into the matter, but I understand that discussions are taking place with the private builders as to whether any modifications in design should be made when further orders are placed.

Platform Tickets at Euston Station

Mr. W. J. Irving (North Tottenham—Lab.) on July 25 asked the Minister of Transport if he was aware of the congestion at Euston Station, due to the decision of the railway company not to issue platform tickets; and if he would take action on that question.

Mr. Alfred Barnes (Minister of Transport), in a written answer, stated: No. The issue of platform tickets at Euston is suspended between 12 noon and 7 p.m. on Saturdays and between 7 p.m. and midnight on Sundays to ease platform working. I am informed that this does not cause serious congestion outside the barriers, but the position will be carefully watched.

Central Station, Sunderland

Mr. Frederick Willey (Sunderland—Lab.) on July 8 asked the Minister of Transport what steps were being taken to repair and rebuild the Central Railway Station, Sunderland.

Mr. Alfred Barnes: Proposals for providing a new passenger station at Sunderland or for reconstructing the existing station are being considered by the company in consultation with the corporation.

Sir Ronald Ross (Londonderry—C.): Will the Minister see that the new station is rather more cheerful looking than the old, which was not cheerful?

Mr. Barnes did not reply.

Scotland and Railway Electrification

Colonel A. Gomme-Duncan (Perth—C.) on July 8 asked the Minister of Transport what steps he had in mind for the electrification of railways in Scotland.

Mr. Alfred Barnes: No schemes for the electrification of railways in Scotland are before me at present.

Colonel Gomme-Duncan said the answer would be received in Scotland with the customary cheer which they always gave to answers of that type.

Sir William Darling (Edinburgh South—C.): As the foremost producer of hydro-electricity in these islands is in Scotland, does the Minister not think it extremely unfair not to allow the electrification of any part of our railways in Scotland?

Mr. Barnes did not reply.

Kings Cross Waiting Rooms

Mr. J. D. Murray (Spennymoor—Lab.) on July 29 asked the Minister of Transport if he was aware that there was only one general waiting room with two chairs and seats around the wall at Kings Cross Station, London; that on Thursday evening, July 18, and Friday morning, July 19, soldiers and sailors had been lying asleep on the table and the floor; and if he would go into the matter with the L.N.E.R. and endeavour to provide facilities for the Servicemen and the general public.

Mr. Alfred Barnes, in a written answer, stated: The general waiting room at Kings Cross has seats around the walls which will accommodate about 30 people and additional chairs are being provided as supplies become available. There is also a ladies' waiting room which is kept open all night; a second ladies' waiting room was destroyed by enemy action. There was a rest room for the Forces in the Salvation Army Canteen with 24 bunks, but this was closed down about a month ago owing, I understand, to the little use that was being made of it.

Stroud Station

Flight-Lieutenant B. T. Parkin (Stroud—Lab.) on July 20 asked the Minister of Transport what plans had been made for extending and rebuilding Stroud Station.

Mr. Alfred Barnes stated in a written answer: No plans have been made for rebuilding or extending Stroud Station.

Macclesfield-Birmingham Rail Service

Air-Commodore A. V. Harvey (Macclesfield—C) on July 29 asked the Minister of Transport if he would improve the rail services between Macclesfield and Birmingham.

Mr. Alfred Barnes, in a written answer, stated: Yes. As from October 7 the 2.54 p.m. and 5.55 p.m. trains on weekdays from Macclesfield to Birmingham are to be accelerated.

Main-Line Railways Employees

Mr. D. T. Jones (The Hartlepools—Lab.) on June 7 asked the Minister of Transport whether he would publish the total number of all grades employed on the main-line railways, excluding docks, and showing each company separate on April 30, 1938, and the corresponding date in 1944, 1945, and 1946; and the number of officials with annual salaries exceeding £320 per annum in 1938, 1944, 1945, and 1946, again showing each main-line company separately.

Mr. Alfred Barnes, in a written answer, stated: I shall publish shortly a statement giving particulars of the number of railway employees in Great Britain. The statement will not be in the same detail as desired by Mr. Jones, but will give the total number in each grade during a specimen week in March for each of the years 1939 to 1945 inclusive. The numbers in all grades employed by each of the main-line railways, excluding docks, during a specimen week in March, 1938, 1944, and 1945, were as follow:—

Railways, excluding ancillary business s	...	...	...
Ancillary business, excluding docks	...	...	...
Total, excluding docks	...	...	...
Docks	...	...	...
Total employees	...	...	...

Railways, excluding ancillary businesses	...	...	...
Ancillary business, excluding docks	...	...	...
Total, excluding docks	...	...	...
Docks	...	...	...
Total employees	...	...	...

Railways, excluding ancillary businesses	...	...	...
Ancillary business, excluding docks	...	...	...
Total, excluding docks	...	...	...
Docks	...	...	...
Total employees	...	...	...

In reply to a further question by Mr. David Jones on June 18, Mr. Alfred Barnes, in a written answer, supplied the following statement pursuant to his previous reply on June 7: The number of railway officials employed by each of the main-line railways (excluding docks) in March, 1938, 1944, and 1945, with salaries of £320 a year and upwards (including war advance in years 1944 and 1945) were:—

	L.M.S.R.	L.N.E.R.	G.W.R.	S.R.
1938 ...	4,413	2,948	1,862	1,381
1944 ...	7,863	5,422	3,938	2,906
1945 ...	9,979	7,450	4,870	3,384

The figures for March, 1946, are not yet available.

Livestock Consignments and Recent Strike

Major Sir Jocelyn Lucas (Portsmouth South—C.) on July 29 asked the Minister of Transport if any provision had been made for the feeding, care, or clearance of livestock consigned to Bishopsgate Station during the period of the recent strike; whether any deaths had occurred; and whether he would give the approximate numbers of poultry and other stock so consigned.

Mr. Alfred Barnes, in a written answer, stated: During the period of the recent strike there was no livestock traffic at Bishopsgate.

Statutory Rules & Orders

Mr. A. T. Lennox-Boyd (Mid Bedford—C.) on July 23 asked the Financial Secretary to the Treasury whether he was aware that 282 officials were entitled to sign S.R. & Os. on behalf of eight Ministers, namely, the President of the Board of Trade, the Ministers of Health, Fuel & Power, Transport, Agriculture, Supply, and Labour, and the Secretary of State for Scotland; and whether he would limit that authority to not more than three senior officers in any one Ministry.

Mr. Glenvil Hall (Financial Secretary to the Treasury): Consideration is being given to the possibility of reducing the lists of officials empowered to authenticate Statutory Rules & Orders made by the Ministers referred to. It will, however, not be feasible to apply so severe a limitation as Mr. Lennox-Boyd suggests. The fact that a particular official signs an Order does not, of course, mean that he makes it. The Order is made by the responsible Minister and the signature is merely to authenticate it.

Mr. Lennox-Boyd asked if the Financial Secretary did not agree that the only remedy the public had against abuse of that power was by negative Prayer, and that as the Orders had the force of law the number of non-Parliamentary rulers should be drastically reduced.

Mr. Glenvil Hall: The officials empowered to authenticate these documents are frequently laid down in Statutory

	1938			
	L.M.S.R.	L.N.E.R.	G.W.R.	S.R.
...	220,550	165,290	97,000	64,149
...	9,927	8,207	2,422	2,419
...	230,477	173,497	99,422	65,568
...	2,577	3,739	2,930	2,191
...	233,054	177,236	102,352	68,759

	1944			
	L.M.S.R.	L.N.E.R.	G.W.R.	S.R.
...	223,210	170,835	103,877	62,361
...	8,159	6,341	2,273	2,152
...	231,369	177,176	106,150	64,513
...	2,390	3,272	5,908	1,031
...	233,759	180,448	112,058	65,544

	1945			
	L.M.S.R.	L.N.E.R.	G.W.R.	S.R.
...	222,937	174,145	105,501	63,070
...	8,270	6,358	2,203	2,406
...	231,207	180,503	107,704	65,476
...	2,648	3,412	4,398	2,094
...	233,855	183,915	112,102	67,570

Rules & Orders, and, although the number may seem large at the moment, by no means all the officials sign the Orders.

Major Guy Lloyd (East Renfrew—C.): Would not the Financial Secretary agree that his reply is a veiled tribute to the "active back benchers"?

Captain John Crowder (Finchley—C.): Could the Financial Secretary give a guarantee that the Ministers concerned actually see the Orders which are signed by the officials?

Mr. Glenvil Hall: Yes, and, of course, they are responsible for them.

Captain Crowder: But do they understand all of them?

There was no reply.

Colonel O. E. Crosthwaite-Eyre (New Forest & Christchurch—C.) asked the Financial Secretary to the Treasury on July 23 the average length of service of the Civil Servants who were entitled to sign S.R. & Os. for the following Ministers, respectively: President of the Board of Trade, Ministers of Health, Labour, Fuel & Power, Transport, Agriculture, and Supply, and the Secretary of State for Scotland.

Mr. Glenvil Hall, in a written answer, stated: The following table gives the average length of service of the officials empowered to authenticate Statutory Rules & Orders made by the Ministers quoted:—

	Years
President of the Board of Trade ...	19
Minister of Health	27
Minister of Labour	30
Minister of Fuel & Power	25
Minister of Transport	26
Minister of Agriculture & Fisheries ...	25
Minister of Supply	29
Secretary of State for Scotland	26

Through Railway Facilities to Brighton and Hove

Mr. W. Teeling (Brighton—C.) on July 29 asked the Minister of Transport when it would be possible to run through trains from the North and the Midlands to Brighton and Hove, thus avoiding the inconvenience of crossing London during the summer holiday season.

Mr. Alfred Barnes stated in a written answer: Shortage of rolling stock prevents the restoration of these through facilities this year, but it is proposed to consider their restoration next summer.

Train Breakdown at Ravenscourt Park

Mrs. Ayrton Gould (Hendon North—Lab.) on July 29 asked the Minister of Transport if he was aware that a crowded train on the Piccadilly Railway had broken down in Ravenscourt Park Station at about 5.50 on July 18 and that the conductor had refused to allow the passengers to alight for 22 minutes; and if he would see that in future conductors were instructed to open the doors of a train that broke down in a station even if it was not scheduled to stop at that station in the ordinary way.

Mr. Alfred Barnes: I am informed that the train in question was held by signal at Ravenscourt Park Station because another train ahead had developed a defect. I am informed that there was a delay of 7, not 22, minutes, before the doors were opened. The London Passenger Transport Board regrets that on this occasion their standing regulation as to the opening of the doors was not carried out more promptly.

Overcrowding in Bradford Train

Lt.-Colonel G. M. Sharp (Spen Valley—Lab.) on July 29 asked the Minister of Transport if he would report on the circumstances under which passengers in the Bradford portion of the 10.45 p.m. train from Kings Cross to Leeds and Bradford had been squeezed into 1½ passenger coaches at Leeds at, approximately, 4 a.m. on Friday, July 12, and continued their journey in discomfort whilst, approximately, 10 empty passenger coaches had remained behind at Leeds; and whether he would instruct the railway companies to have greater regard for the well-being of their customers.

Mr. Alfred Barnes, in a written answer, stated: On the night of July 11-12, eight vehicles were, as usual, detached from this train at Leeds to form another train. There were 21 first class and 56 third class seats on the remaining section which went on to Bradford. I am informed that there would have been sufficient seats for all but a few of the standing passengers, if those seated had been willing to make room. The railway authorities considered adding an extra coach, but decided not to, because this would have delayed the train for ten minutes, and the rest of the journey took only twenty minutes in all. There have been no previous complaints about overcrowding on this train, the loadings of which are being carefully watched.

Level Crossings

Mr. Frank Anderson (Whitehaven—Lab.) on July 26 asked the Minister of Transport the number of level crossings situated on trunk roads as at February, 1946.

Mr. Alfred Barnes stated in a written answer: The number of level crossings on the roads which were trunk roads in February, 1946, is 110.

Glasgow-London Goods Train Service

Lieutenant William Shepherd (Bucklow—C.) on July 29 asked the Minister of Transport what was the average time taken for a consignment of goods to come by goods train from Glasgow to London *via* the L.N.E.R. service.

Mr. Alfred Barnes: Three days.

Lieutenant Shepherd: Is the Minister aware that the average time is found by private traders to be nearer three weeks, and in many cases a month, and will he look into the service?

Mr. Barnes: Certainly.

Hove Railway Schemes

Mr. W. Teeling (Brighton—C.) on July 29 asked the Minister of Transport when it would be possible to commence the construction of the Tamworth road bridge, Hove, together with a new central station adjacent, as envisaged before the war in 1939.

Mr. Alfred Barnes, in a written answer, stated: The proposal for the reconstruction of this bridge has recently been reconsidered by the Hove Town Council, which is the responsible highway authority, but it has decided temporarily to defer it. I understand from the Southern Railway Company that the conversion of the nearby Aldrington Halt into a station is included in its post-war works programme, but must be accorded a lower priority than a number of other more urgent schemes.

L.N.E.R. Wagon Repairs

Major E. A. Legge-Bourke (Isle of Ely—C.) on July 29 asked the Minister of Transport what was the average period of time goods wagons were kept as non-runners awaiting repairs on the L.N.E.R. and at Whitemoor Yards; and why, in early July, 168 wagons had been labelled from Whitemoor to Peterborough for repairs, the majority of which could have been carried out at Whitemoor.

Mr. Alfred Barnes, in a written answer, stated: Information is not available on which to base a reliable estimate of the average periods wagons are awaiting repairs on the L.N.E.R. and at Whitemoor Yards. I understand that during July it was necessary to send some wagons to Peterborough for repairs because the repairing firms at Whitemoor were fully occupied.

Gloucester Level Crossings

Flight-Lieutenant B. T. Parkin (Stroud—Lab.) on July 29 asked the Minister of Transport what was the annual cost of operating level crossings in Gloucester.

Mr. Alfred Barnes, in a written answer, stated: I am informed that the annual staff cost of operating level crossings in Gloucester is £4,513.

L.N.E.R. Ticket Collector

Mr. W. T. Proctor (Eccles—Lab.) on July 29 asked the Minister of Transport under what authority Arthur Chaplin, L.N.E.R. ticket collector, had been dismissed by the L.N.E.R. following on his conviction for an offence in connection with clothes rationing at Old Street court on July 18.

Mr. Alfred Barnes: Mr. Arthur Chaplin has not been dismissed by the L.N.E.R. The statement made by the company's legal representative during the prosecution that he would be dismissed was due to a misunderstanding and was incorrect.

Liverpool-Todmorden Train Service

Mr. H. E. Randall (Clitheroe—Lab.) on July 29 asked the Minister of Transport if increased accommodation could be provided for passengers on the 5.53 a.m. train from Exchange Station, Liverpool, to Todmorden, owing to the acute congestion between Blackburn and Accrington.

Mr. Alfred Barnes: I understand that it is on the 6.45 a.m. train from Preston to Todmorden, with which the 5.53 a.m. train from Liverpool to Blackpool connects, that congestion sometimes occurs. Since July 3, whenever rolling stock permits, this train has been strengthened by an extra coach which meets the requirements of the traffic.

Railway Companies and Loss from Strikes

Major Sir Jocelyn Lucas (Portsmouth South—C.) on July 29 asked the Minister of Transport whether any compensation was payable by the railway companies to growers of perishable foodstuffs whose consignments were ruined by unauthorised strikes.

Mr. Alfred Barnes stated in a written answer: Under the standard terms and conditions of carriage of merchandise, authorised by the Railway Rates Tribunal under the provisions of the Railways Act, 1921, the railway companies are not held liable for loss, damage, or delay proved by the railway companies to have been caused by strikes. The relevant conditions are No. 17 and No. G.14.

Interim Scheme for Road Haulage

Captain Peter Thorneycroft (Monmouth—C.) on June 24 asked the Minister of Transport whether he was yet in a position to announce his plans for dealing with the situation which would arise on August 15, when the Road Haulage Organisation was due to come to an end.

Mr. Alfred Barnes stated in a written answer: Yes. As a result of discussions between my department and the Road Haulage Association, the following scheme has been agreed, pending the nationalisation of long-distance road haulage services, in regard to which the Government's policy was announced by the Lord President of the Council on November 6, 1945. The scheme will operate from August 16, when the Road Haulage Organisation will come to an end. The scheme provides for the appointment by the Association throughout the country of contact officers and area transport officers, who will assist in finding vehicles for the movement of essential traffic where there is any difficulty in obtaining the necessary facilities. Should these officers be unable to meet require-

ments, a call can be made on an emergency reserve, consisting of vehicles of various types up to a minimum carrying capacity of 40,000 tons, which hauliers will contract with the Association to make available if required. One-quarter of this reserve will be available at eight hours' notice, or twelve hours if the call is between 4 p.m. and 8 a.m.; a further quarter at twenty-four hours' notice; and the balance at forty-eight hours' notice. In regard to rates, the general principal will be to adopt the recognised commercial rate based on current operating costs. The scheme will operate for a period of one year, but will be renewable, at my option, for two further periods of six months.

The Ministry of Transport will, through its area road haulage officers, continue to act as a focusing point for the placing of the bulk of Government traffic with hauliers, but will have no operational responsibility.

Pooled Accounts of Controlled Undertakings

Major J. A. Boyd-Carpenter (Kingston-on-Thames—C.) on July 29 asked the Minister of Transport why Section No. 8, Details of Working Expenses, was omitted from the published annual accounts of the L.P.T.B.

Mr. Alfred Barnes stated in a written answer: Under the Railway Control Agreement all revenue receipts and expenses of the controlled undertakings are pooled and clearances between them are not made. Any details of working expenses which might be given for an individual undertaking would, therefore, be misleading.

Newport-Cardiff Bus Route

Mr. Peter Freeman (Newport—Lab.) on June 24 asked the Minister of Transport whether he was aware of the crowded condition of the 30 route bus from Newport to Cardiff, especially from 12 noon to 2 p.m. and from 5 to 6 p.m., causing many season-ticket holders to wait for long periods, which had been increased as a result of the recent five only standing order; and what steps were being taken to augment the number of buses on that route.

Mr. Alfred Barnes stated in a written answer: No specific application is before my Regional Transport Commissioner for authority to increase the number of buses on this route, but he will investigate the position forthwith.

Great Britain-Ireland Services

Sir Ronald Ross (Londonderry—C.) on July 29 asked the Minister of Transport what percentage of the tonnage in actual use for taking Service personnel on leave from the Continent had been requisitioned from cross-channel services between Great Britain and Ireland.

Mr. Alfred Barnes: Three vessels formerly engaged on cross-channel services between Great Britain and Ireland before requisitioning are now engaged on Service personnel movement to and from the Continent, and represent 14.06 per cent. of the present total tonnage so employed.

Sir R. Ross: Is the Minister aware that hundreds of the fortunate people who have managed to circumvent the obstructions of the Passport Office in going to Ireland are not able to cross, and have had to cancel their holidays, because there are not sufficient boats?

Mr. Barnes: That is a question which appears to concern the Passport Office.

Sir R. Ross: Is not the Minister aware that people who got through the Passport Office are still unfortunate, because they cannot get sailing tickets?

Mr. Barnes: I have told Sir Ronald Ross on more than one occasion that this service has not suffered adversely, compared with similar services.

Sir Ronald Ross on July 29 also asked the Minister of Transport why work on the reconditioning of the ss. *Lady Connaught* was held up, in view of the need for cross-channel ships to Ireland.

Mr. Alfred Barnes: This vessel was redelivered to her owners on January 2 this year, and the arrangements for reconditioning are in their hands. They have informed me that the work is proceeding satisfactorily.

East Scotland-London Steamboats

Mr. E. G. Willis (Edinburgh North—Lab) on July 29 asked the Minister of Transport when it was proposed to resume the steamboat passenger services from Scottish east coast ports to London.

Mr. Alfred Barnes, in a written answer, stated: The passenger vessels engaged on this service prior to the war are not now available, and I am informed that the companies concerned have replaced them by cargo ships.

Release of L.M.S.R. Vessels

Major S. G. Haughton (Antrim—C.) on July 8 asked the Minister of Transport when the L.M.S.R. vessels ss. *Duke of Rothesay* and ss. *Duke of York* would be released from requisition.

Mr. Alfred Barnes: These vessels are still required for military service, but I hope it may be possible to release them from requisition about October of this year. Re-conditioning may take about six months.

Sir Ronald Ross (Londonderry—C.): Is the Minister aware that the tonnage available from England to Northern Ireland is only about half what it was before the war? Why should Northern Ireland, particularly, have to suffer, after six years of blockade, by not having enough vessels for the summer trade?

Mr. Barnes: Northern Ireland is not suffering any more than any other locality.

Sir Ronald Ross: It is.

Steamship Services to Northern Ireland

Lt.-Colonel Sir Walter Smiles (Down—C.) on July 11 asked the Minister of Transport if he was aware that many people would be deprived of holidays owing to the lack of steamer accommodation between Northern Ireland and Great Britain, and if he would increase the number of passenger ships or allow passenger-carrying motor-boats to ply between Donaghadee and Portpatrick, provided passengers had a valid travel permit and reported to the police stations in Donaghadee and Portpatrick.

Mr. Alfred Barnes in a written answer stated: I am aware that with the advance into the holiday season, there is growing pressure on the steamship services to Northern Ireland, and everything possible is being done to increase the number of passenger ships on these routes. No further increases beyond those mentioned in the answer I gave to Sir Ronald Ross (Londonderry—C.) on June 24 can at the moment be indicated, with the exception that during August there will be a nightly sailing, excepting Sundays, between Liverpool and Belfast, in place of the present sailing four times a week in each direction. Motor boats could not comply with the conditions laid down under the Merchant Shipping Acts for vessels carrying passengers between Great Britain and Northern Ireland.

London-Aberdeen Air Service

Major H. R. Spence (Aberdeen & Kincardine Central—C.) on July 24 asked the Parliamentary Secretary to the Ministry of Civil Aviation what types of aircraft it was proposed to use on the Aberdeen to London air service; and whether a freight as well as a passenger service was envisaged.

Mr. Ivor Thomas (Parliamentary Secretary, Ministry of Civil Aviation): It is planned to operate the service London-Edinburgh-Aberdeen with "Dakota" aircraft. A separate freight service is not at present enyisaged, but freight within the capacity of the aircraft will be carried.

Major Spence: Will the Parliamentary Secretary see if he cannot operate this line with British aircraft, such as the "Dove"?

Mr. Thomas: In due course that will be done, but we have to use all our available aircraft at the present time.

London-Cardiff Air Service

Mr. Peter Freeman (Newport—Lab.) on July 24 asked the Parliamentary Secretary to the Ministry of Civil Aviation when air services would be in operation from South Wales to London and other airports in the British Isles.

Mr. Ivor Thomas: It is planned to open the air service between Cardiff and London towards the end of this year. South Wales will be linked with other aerodromes in the British Isles when the necessary aircraft and ground facilities become available.

Mr. Freeman: Can the Parliamentary Secretary give further details as to how often these services will operate between London and Cardiff, and at what airport in London they will arrive?

Mr. Thomas: The airport will in all probability be Northolt. I cannot, without notice, give the frequency of the service, but my recollection is that it is a daily service.

Lt.-Colonel Sir Thomas Moore (Ayr Burghs—C.): Does not the Parliamentary Secretary think that there are enough Welshmen in London?

Mr. Thomas: The object of the service is to take Englishmen to Wales (laughter).

G.W.R. and Order of St. John

As a result of a recommendation made by the Great Western Railway Central Ambulance Committee, the company's Chief Medical Officer, Dr. H. H. Cavendish Fuller (as recorded in our July 12 issue) has been admitted to the Order of St. John of Jerusalem in the grade of Serving Brother.

The following members of the staff also have been admitted to the Order in the grade of Serving Brother for exceptional services which they have rendered to the movement on the G.W.R. over a long period of years:—Messrs. E. E. Speare, signalman, Traffic Department, Bugle; A. J. Webb, clerk, Goods Department, Stroud; R. H. Pryce, Chief Clerk, Divisional Superintendent's Office, Chester; R. N. Patton, fitter, Chief Mechanical Engineer's Department, Swindon; and G. Payne, checker, Goods Department, Yeovil.

Mr. R. F. Borrough, Divisional Ambulance Secretary, London "A" Division, and Mr. P. Thomas, Inspector, Docks Department, Plymouth, have been promoted in the Order to the grade of Officer (Brother).

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Notes and News

Wharf Foreman Required.—A wharf foreman, not over 35 years of age, is required by the Nigerian Government Railway for one tour of 18 to 24 months with possible permanency. For particulars see Official Notices on page 167.

Saw Mill Manager Required.—A saw mill manager is required by the Sudan Government for the Agriculture and Forests Department. Candidates should be between 25 and 37 years of age. For full particulars see Official Notices on page 167.

British Railway Stockholders.—The Council of the L.N.E.R. Stockholders Association is advising stockholders of the four main-line companies to support the Chairmen of those companies in taking all possible steps to oppose nationalisation of railways. See Official Notices, page 167.

Assistant Transportation Manager Required.—An assistant transportation manager is required by the Malayan Government for the railway department, for one tour of three years, with prospect of permanent and pensionable appointment. Candidates, aged 30 to 35, must be Associate Members of the Institute of Transport, or hold equivalent professional or academic qualification. See Official Notices on page 167.

B.E.A.M.A. Export Department.—The British Electrical & Allied Manufacturers' Association states that it is taking steps to strengthen its activities in connection with the national export drive and intends to establish an Export Department under the direction of Mr. D. Maxwell Buist, M.I.E.E., for that purpose. Arrangements are being made to enable Mr. Buist to visit the principal export markets at an early date.

London Transport Declares War on Insect Pests.—The interiors of all London Transport's buses, trains, trams, trolleybuses, and coaches are to be sprayed regularly with "D.D.T." every three months to destroy flies and other insect pests. "D.D.T." in the form of sprays, powders, and oil solutions will be used also in London Transport's offices, canteens, kitchens, and clothing stores, and in new tube construction works to prevent the breeding of mosquitoes in stagnant water.

Rail and Bus Fares Increase in Northern Ireland.—The Northern Ireland railway companies and the Northern Ireland Road Transport Board announced on July 30 that the following increases in rates and fares will come into force on September 1: Day, weekend and regular fares, 12½ per cent.; season tickets, workmen's daily and weekly tickets, and traders' tickets, 10 per cent.; passenger train traffic and parcels, approximately 10 per cent.; goods train and lorry freight rates, with certain exceptions, 10 per cent. These increases will bring the rates and fares to 35 per cent. and 25 per cent. respectively above the 1939 levels.

North Western Road Car Co. Ltd.—Mr. W. T. James, Chairman of the North Western Road Car Co. Ltd., referred in his speech at the annual general meeting on July 26 to the development of co-ordination between the company's services and those of other operators in its area. A scheme of interavailability of tickets with the railways with which the company was so closely associated was also in force. The company was endeavouring to continue to operate at its pre-war fares as long as it possibly could, although costs had increased by about 80 per cent. compared with the years before the war. No one disputed that the bus industry was one of the cheapest and most efficiently run in the country, and it was surely much better for it to continue to operate as at present than to impose theoretical experiments that would result in loss of efficiency and ultimately prove to be against the public interest.

Potters Bar Collision, L.N.E.R.—In our report last week of the inquiry into the collision at Potters Bar, L.N.E.R., on February 9, the paragraph was headed incorrectly "Hatfield, L.N.E.R., Accident Report."

G.W.R. Covered Wagons for Motorcar Exports.—One hundred additional end-door, quick loading, covered wagons are to be built by the G.W.R. for the conveyance of motorcars from the works to the ports. The company has 500 of these wagons in service and in the first six months of this year carried 12,000 cars from Morris Cowley and Longbridge alone.

A Capital Bonus Distribution.—Associated British Engineering Limited (formerly Petters Limited), which is a large shareholder in Brush Electrical Engineering Limited, is distributing to its ordinary shareholders a capital bonus from assets in the shape of one ordinary share of Brush Electrical in respect of each £1 of Associated British Engineering stock. It is explained that, as the shareholders are receiving a direct distribution of assets, the scheme does not contravene the current ban on capital bonuses. The company also is paying a 12 per cent. dividend, compared with 8 per cent. last year.

Railway Convalescent Homes.—The income and expenditure account of the Railway Convalescent Homes for the year ended December 31, 1945, shows an income of £51,180 and expenditure of £53,540, leaving a balance of expenditure over income of £2,360. The income was made up of £42,156 from railway staff collections; £683 from donations from the public, etc.; £4,815 from investments (including income tax recoverable); £2,434 from hospital and War Department services; and £1,092 from sundries. Expenditure on maintenance was £45,639, and on administration, £7,901. The number of patients who used the homes in 1945 was 5,803, which included 3,985 men, 1,733 women, and 85 babies.

L.N.E.R. Hatfield Accident Inquiry.—An inquiry into the derailment of the L.N.E.R. 7.5 p.m. Kings Cross to Aberdeen express at Hatfield on July 15 (reported in our July 19 issue), was opened by Lt.-Colonel G. R. S. Wilson at Liverpool Street Station on July 25. Two schoolboys who saw the accident described how the express was wobbling as it came round the curve, the tender going one way and the boiler the other. The driver said the engine gave a left-hand roll when travelling at about 60 m.p.h. As soon as he realised the engine was off the rails he made a full brake application. The engine was derailed before the tender, but he could not say when the coaches were derailed. The drivers of two trains which preceded the Aberdeen express said they noticed nothing unusual when passing over the section where the accident occurred.

Chloride Electrical Storage Co. Ltd.—At the annual general meeting of the Chloride Electrical Storage Co. Ltd., the Chairman, Mr. W. S. Naylor, said that there had been a pressing demand for Exide-Ironclad type batteries for electric traction. It had been impossible to meet requirements fully, and priority was being given to batteries for industrial trucks for factory, railway station, and docks transport. The Royal train now being prepared by the South African Railways for the forthcoming visit of the King and Queen would be equipped with Exide-Ironclad batteries.

Fuel and the Future.—The Fuel Efficiency Committee of the Ministry of Fuel & Power, under the chairmanship of Dr. E. S. Grumell, C.B.E., has arranged a Conference on "Fuel and the Future" to

British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices August 6, 1946	Rise/Fall
G.W.R.				
Cons. Ord.	60⅜	47½	55	+ ½
5% Con. Pref. ...	124½	104½	114	− 1
5% Red. Pref. (1950)	107⅜	101½	103½	—
5% Rt. Charge ...	137½	120	128½	—
5% Cons. Guar. ...	135½	117	123½	—
4% Deb.	118	106	116	—
4½% Deb.	119½	108	116½	—
4½% Deb.	124½	111½	122	—
5% Deb.	138	124	132½	—
2½% Deb	83	74½	86½	—
L.M.S.R.				
Ord.	33	23½	27½	+ ⅜
4% Pref. (1923) ...	65	50	53	—
4% Pref.	80⅜	69½	75	+ 1½
5% Red. Pref. (1955)	106½	99½	102½	—
4% Guar.	106½	97	100½	—
4% Deb.	110½	102	107	− ½
5% Red. Deb. (1952)	110½	103½	106½	—
L.N.E.R.				
5% Pref. Ord. ...	8½	5½	5½	—
Def. Ord.	4½	2⅜	2⅜	—
4% First Pref. ...	62½	49½	51	+ ½
4% Second Pref. ...	33⅜	24½	26½	+ ⅜
5% Red. Pref. (1955)	103	96	99	—
4% First Guar. ...	104½	95	99	—
4% Second Guar. ...	97	89½	93½	—
3% Deb.	91⅜	82½	92	—
4% Deb.	109½	101	107	− ½
5% Red. Deb. (1947)	103¼	100	100	—
4½% Sinking Fund Red. Deb.	106⅜	103	104½	—
SOUTHERN				
Pref. Ord.	79½	63	70	+ ½
Def. Ord.	27	20½	20	—
5% Pref.	124½	104	112	− 1
5% Red. Pref. (1964)	117	107	109½	—
5% Guar. Pref. ...	135⅜	117	123½	—
5% Red. Guar. Pref. (1957)	117	106½	111½	—
4% Deb.	117	104½	114	− ½
5% Deb.	137	124	131½	—
4% Red. Deb. (1962-67)	112	104½	109½	—
4% Red. Deb. (1970-80)	113½	104	109½	—
FORTH BRIDGE				
4% Deb.	106	103	106	—
4% Guar.	106	101	103	—
L.P.T.B.				
4½ "A"	125	117	125½	+ 1
5% "A"	135	127	134½	—
3% Guar. (1967-72)	100	97½	104	—
5% "B"	125½	115	120½	—
"C"	70	58	56½	—
MERSEY				
Ord.	37	31½	30	—
3% Perp. Pref. ...	72½	68½	72	—
4% Perp. Deb. ...	104½	104	105	—
3% Perp. Deb. ...	84	78½	82½	—
IRELAND*				
BELFAST & C.D.				
Ord.	8½	6	7½	—
G. NORTHERN				
Ord.	34	24½	41¾	− 1/16
Pref.	52½	42¾	62	—
Guar.	80	68	92	+ ½
Deb.	97½	87½	106	+ 4
IRISH TRANSPORT				
Common	—	—	18/6	− 1½
3% Deb.	—	—	103½	+ ⅜

* Latest available quotation

OFFICIAL NOTICES

British Railway Stockholders

STOCKHOLDERS in the four main lines (G.W.R., L.M.S.R., L.N.E.R., and S.R) are strongly advised and requested to sign and return to the Chairmen of the Companies, without delay, the postcards issued to them authorising the Boards of the Companies to take all possible steps to oppose nationalisation of their undertakings. Stockholders are also invited to join the *London & North Eastern Railway Stockholders Association, 108a, Cannon Street, London, E.C.4, and 1, Chancery Lane, Spring Gardens, Manchester, 2.* This separate organisation is necessary by reason of the exceptional position of the Junior Stockholders. No dividend has been paid since 1925 (1 per cent.) on £35,923,810 Deferred Ordinary Stock, and none has been paid since 1930 (1 per cent.) on £42,360,925 5 per cent. Preferred Ordinary Stock. Another £66,142,180—4 per cent. Second Preference Stock—received only 3 per cent. for 1945. On the other hand, the Government has appropriated in the years 1941/45 over £200 million out of the Railway Pool Revenues.

Speaking at the Socialist Party Conference at Bournemouth on June 14, Mr. Hugh Dalton, the Chancellor of the Exchequer, said: "*We have got a very good bargain, thank you, for the Bank of England, and what we have taken over is worth a great deal more than the price which has been paid.*" *Mr. Dalton added that the Government had treated the stockholders of the Bank of England on a more generous basis than was likely they would treat any later cases.*

"Fair compensation" promised by the Socialists at the General Election apparently means "a Very Good Bargain" for the Government.

Railway Stockholders:
You have been warned!

Issued by the Council of the L.N.E.R. Stockholders Association

Improvements in Rails

BRITISH Provisional Patent 19429/46, offered for sale or licence to work. Contact patentee.

"THE History of the Solent Tunnel Scheme." By Fred Turton (Vectis Press, Cowes, I.W.). A Book for the Railway Historian. Map and illustrations by Author. 2s. 9d. post free from: F. Turton, "Royston," Sandown, I.W.

REQUIRED by important Firm of Locomotive Manufacturers—Senior and Junior Draughtsmen with experience in Steam and/or Diesel Locomotive design. Details of experience and salary required to Box 17, *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS

APPLICATIONS from qualified candidates are invited for the following post:—

WHARF FOREMAN required by the Nigerian Government Railway for one tour of 18 to 24 months with possible permanency. Salary £400, rising to £560, a year. On salary of £400 local allowance is £60 a year and separation allowance for married men is between £84 and £204 a year, according to number of dependents. Outfit allowance £60. Free passages and quarters. Candidates, not over 35 years of age, must have a thorough practical knowledge of port warehouse and wharf working, also port yard working at a large depot. They must be able to supervise wharf and yard staff and be experienced in the loading and handling of out-of-gauge loads.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/16796.

Sudan Government

THE Agriculture & Forests Department requires a Saw Mill Manager for service in the Sudan in the Forestry Division of the Department. Age 25-37

Duties.—Supervision of logging, haulage, saw milling, kiln seasoning, creosoting plant, saw mill accounts, timber sales, and training of Sudanese in these duties.

Qualifications.—Practical experience in the timber industry with preference to candidates possessing experience in kiln seasoning, the operation of pressure creosoting plant, a knowledge of timber accountancy, field logging, and the operation and repair of M.T. The possession of educational qualifications equivalent to School Leaving Certificate standard is necessary.

Terms of Service.—Short-term contract for an initial period of two years. If retained beyond this period an increase of pay may be granted. Salary will be determined by age, experience and qualifications between £E.600—£E.900 (£E.1 = £1 0s. 6d.). Outfit allowance of £E.60 is payable when the contract is signed, provided salary on appointment does not exceed £E.800. Cost-of-living allowance at the rate of 35 per cent. of pay, subject to a maximum of £E.15 per mensem, is now payable on all salaries up to £E.1,200 per annum. A progressively reduced allowance is payable to officials on higher salaries. There is at present no income tax in the Sudan. Free passage on appointment. Strict medical examination.

Applications giving full details of age, qualifications and experience should be sent to the Sudan Agent in London, Wellington House, Buckingham Gate, London, S.W.1. Envelopes to be marked "Saw Mill Manager."

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS

APPLICATIONS from qualified candidates are invited for the following post:—

ASSISTANT TRANSPORTATION MANAGER required by the Malayan Government for the Railway Department, for one tour of three years, with prospect of permanent and pensionable appointment. Salary $850 a month (Malayan dollar = 2s. 4d.). Free passages. Outfit allowance £60 on first appointment. Children's allowances at the rates of $70 a month for the first child and $50 for the second. Candidates, aged 30 to 35, must be Associate Members of the Institute of Transport or hold equivalent professional or academic qualification. They should have served as special traffic apprentices with one of the British Railways selected under their training schemes by competitive examination, or have been engaged direct from a university, and must subsequently have held a responsible executive position.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/16704.

LONDON PASSENGER TRANSPORT BOARD. Applications are invited for PROBATIONARY APPOINTMENTS to the JUNIOR EXECUTIVE CLASS from persons of either sex whose age does not exceed 25 years. In the case of applicants with war service, the age limit will be raised to the extent of such service. The minimum educational qualification, according to age, is the possession of a University Degree (2nd Class Honours), or the Higher School Certificate or equivalent qualification. When the result of an examination is awaited, application should be made when this is known. The commencing salary will vary according to age, qualifications, and previous experience, but, inclusive of war wage, will be not less than, approximately, £300 p.a. in the case of graduates, and £200 p.a. in the case of other candidates. Successful candidates will be required to pass a medical examination. Membership of the Board's contributory superannuation fund is compulsory after satisfactory completion of the probationary period. Canvassing, either directly or indirectly, will disqualify. Applications, giving full particulars of education, professional, or other qualifications, experience, age, and present remuneration, should be sent not later than August 31, 1946, to the Chief Staff and Welfare Officer (reference ER/E.251), London Passenger Transport Board, 55, Broadway, London, S.W.1.

STATION DESIGN. A striking example of modern British practice at the important wayside station of Luton. Reprinted from *The Railway Gazette*, July 7, 1944. *Price 1s. Post free 1s. 2d.*

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take place in London on October 8, 9, and 10. Most sessions will be held at the Central Hall, Westminster. The openings session will be addressed by the Minister of Fuel & Power and the Minister of Health. More detailed information on the organisation and programme of the conference is being issued by the Ministry of Fuel & Power with the July issue of *Fuel Efficiency News*, together with application forms for the use of those wishing to attend the conference. Others interested should apply for particulars to the Ministry of Fuel & Power, Fuel Efficiency Directorate, Queen Anne's Chambers, Tothill Street, London, S.W.1, or to any Regional Office of the Ministry of Fuel & Power.

Government Surplus Machine Tools.—An additional selling depot for Government-owned surplus machine tools will be opened at the Ministry of Supply Depot, Theale, near Reading, on August 12. Machine tools may be inspected between 10 a.m. and 4 p.m. Mondays to Fridays inclusive, and purchases arranged at the site. A large selection of general purpose machine tools will be on sale on the opening day, and additional machines will be made available for purchase as rapidly as possible. An on-site sale of surplus machine tools will be opened by the Ministry of Supply at Rolls Royce Limited, L.M.S.R. Hangar, London Road, Derby, on August 14 at 10 a.m. The sale will close on August 20 at 4 p.m. There will be approximately 300 machine tools available, including autos, capstan lathes, milling, grinding, and drilling machines. The unsold machines will be on view daily for competitive tendering between 10 a.m. and 4 p.m., except Saturday and Sunday, from August 21 to 27. Prospective purchasers may visit the site between those dates to inspect the residual machines and obtain tender forms.

San Paulo Railway Electrification Contract.—An important contract has just been placed by the San Paulo (Brazilian) Railway Co. Ltd. with the English Electric Export & Trading Co. Ltd. It covers the electrification of the San Paulo Railway from Jundiahy to Mooca, and includes the provision of electric locomotives, rolling stock, substations and associated distribution equipment.

J. Stone & Co. Ltd.—At the annual general meeting of J. Stone & Co. Ltd., the Chairman, Mr. Kenneth H. Preston, said that, although the cancellation of war contracts had been felt in the year under review, the position in the company's foundries now was much more healthy. In addition to their pre-war customers, they now had on their books many firms which previously were not users of either magnesium or aluminium. It was expected that railway replacement programmes would keep the electrical side of their business busy for some time to come. Some wartime to peacetime conversion problems still confronted them, and must be expected to have their effect on trading results of the current year.

London Transport Appointments.—The London Passenger Transport Board is seeking applicants for probationary appointments to the junior executive class from persons of either sex not over 25. In the case of applicants with war service, the age limit will be raised to the extent of such service. The minimum educational qualification, according to age, is the possession of a University Degree (2nd Class Honours), or the Higher School Certificate or equivalent qualification. See Official Notices above.

Fluorescent Lighting in L.M.S.R. Coach.—This form of lighting is being tried by the L.M.S.R. in a first class vestibule coach just introduced on the 5.50 p.m. St. Pancras and Bradford restaurant car train. Twenty-four 20-watt 2 in. × 1¼ in. 115-volt tubes of the "warm white" type have been fitted. Ten of the tubes are ceiling lights and 14 are placed over the windows. The absence of shadow gives a soft restful illumination.

General Electric Co. Ltd.—Sir Harry Railing, Chairman of the General Electric Co. Ltd., said at the annual general meeting on July 25 that the company's exports had been 90 per cent. higher than in the previous year, and were now actually greater in volume than before the war. The company was expanding its manufacturing capacity for capital plant at Wilton, Erith, and Coventry, so as to increase the production of heavy engineering, traction, and telecommunication work. One of their greatest difficulties in meeting demands for their products at home and abroad lay in getting permits for extensions to balance or modernise production. They considered that unnecessary time was lost by the slowness of the administrative machinery, which took five or six months before final decisions could be made.

XUM

Railway Stock Market

Holiday influences, and the tendency to await news from the Peace Conference, continued to limit business in stock markets, although with buying interest rather more in evidence, values in some sections showed strong response. Outstanding feature was sharp gains in coal shares on hopeful deductions from the global award in respect of the colliery industry, although it is recognised that some years in fact may have to elapse before nationalisation compensating in respect of individual companies is finally decided. Bolsover, Staveley, Shipley, Butterley, Sheepbridge, and Carlton Main were among shares which went ahead. William Cory also moved higher. Powell Duffryn were little changed on balance, but later, various other colliery shares received attention on the view that they seem undervalued in comparison with those which showed earlier sharp gains. In contrast, the seriousness of the coal shortage was emphasised by the Government's efforts to secure increased use of fuel oil. The latter drew attention to such shares as Ruston & Hornsby, Babcock & Wilcox, etc., and at the same time there was a better tendency in Shell and other oil shares.

Home rails again attracted little attention, although after the award in respect of the colliery industry and the rise in colliery shares, prices in the home railway market were inclined to strengthen, and buyers were more in evidence. As has been suggested in these notes on previous occasions, a case can be made out for the view that home rail junior stocks are undervalued in relation to colliery shares; but many of the deductions now being made from the global figure in respect of the colliery industry must be regarded as pure guesswork. In fact, now that the award has been announced, it is no easier to arrive at a satisfactory basis for valuing colliery shares.

The global award in respect of coal is, however, above the figure which had been regarded as fair by the Government before the matter was submitted to arbitration. Probably sentiment has been influenced by the view that if it were decided to arrive at a global award for the railways as the first stage in determining nationalisation compensation, arbitration would secure a fair basis. The assumption is that as arbitration has been allowed in the case of the colliery industry, it could not be disallowed in respect of the railways in the event of nationalisation, assuming that the companies considered it necessary.

After declining, Great Western ordinary firmed up to 54¾, which, compared with 54¾ a week ago, although the 5 per cent. preference at 114 was a point down on balance, and the guaranteed stock eased to 122½. Great Western 4 per cent. debentures were 116, compared with 116½ a week ago. L.M.S.R. recovered on balance from 26⅝ to 27, and the 4 per cent. senior preference was ½ better at 74, and the 1923 preference at 53 regained an earlier small decline. L.M.S.R. 4 per cent. debenture at 107 were fractionally lower, but the 4 per cent. guaranteed stock was maintained at 100½.

Compared with a week ago, L.N.E.R. second preference has strengthened from 26 to 26¼, and the first preference from 50 to 50½. L.N.E.R. first guaranteed remained at 98½, but the second guaranteed improved from 93½ to 94. Southern deferred at 20 was ⅛ down on balance, but the preferred ordinary improved from 69½ to 70, although the 5 per cent. preference at 115 was lower compared with a week ago. London Transport "C" at 56 was unchanged on balance.

Although sentiment is still affected by conflicting views as to what should constitute a fair compensation basis for stockholders in the event of nationalisation, there seems to be a growing belief that current levels for junior stocks may eventually prove to be moderate valuations, particularly when it is borne in mind that the railways have never given up their right to standard revenue as defined in the 1921 Act.

Argentine rails have lost ground awaiting news as to the progress of the talks in the Argentine, but declines on balance were mostly small. Buenos Ayres Great Southern was 13, compared with 13¼ a week ago, the 5 per cent. preference 29¼, compared with 30 and the 4 per cent. debentures 71½ compared with 73. Buenos Ayres Western receded from 16½ to 15¾, although the 4½ per cent. preference was maintained at 41½; but the 4 per cent. debentures receded from 70½ to 68½. Central Argentine was 9¼, as against 9½ a week ago, the 6 per cent. preference 32, against 33, and the 4 per cent. debentures 68, against 69½. Buenos Ayres & Pacific eased to 7¼, and the 4 per cent. debentures were better at 76½. Nitrate Rails shares strengthened to 85s. 6d. and in other directions, further gains were recorded by French railway sterling bonds. Canadian Pacific firmed up to 22⅝, dollar stocks reflecting the better tendency of Wall Street markets.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open	Week ended	Traffic for week: Total this year	Traffic for week: Inc. or dec. compared with 1944/5	No. of Week	Aggregate traffics to date: Totals 1945/6	Aggregate traffics to date: Totals 1944/5	Aggregate traffics to date: Increase or decrease	Shares or Stock	Prices: Highest 1945	Prices: Lowest 1945	Prices: August 6, 1946
				£	£		£	£	£				
South & Central America	Antofagasta	834	28.7.46	30,680	+ 1,770	30	962,440	914,040	+ 48,440	Ord. Stk.	12	8¾	9¼
	Arg. N.E.	753	27.7.46	ps.335,400	+ps.38,800	4	ps.1,247,600	ps.1,222,000	+ ps.25,600	,,	10	5¾	7¼
	Bolivar	174	June, 1946	3,692	— 948	26	25,836	30,275	— 4,439	6 p.c. Deb.	8¼	5¼	6¼
	Brazil	—	—	—	—	—	—	—	—	Bonds	25	17	27
	B.A. Pacific	2,771	27.7.46	ps.2,224,000	+ps.261,000	4	ps. 8,712,000	ps.7,707,000	+ ps.1,005,000	Ord. Stk.	7	5	7¼
	B.A.G.S.	5,080	27.7.46	ps.3,316,000	+ps.118,000	4	ps. 13,563,000	ps.12,158,000	+ ps.1,405,000	Ord. Stk.	13¾	10½	13
	B.A. Western	1,924	27.7.46	ps 1.154,000	+ps. 2,000	4	ps. 4,577,000	ps.4,417,000	+ ps.160,000	,,	12¼	9¼	15½
	Cent. Argentine	3,700	27.7.46	ps.3,109,500	+ ps.98,150	4	ps. 19,272,615	ps.11,770,600	+ ps. 502,015	,,	9¾	7	9
	Do.	—	—	—	—	—	—	—	—	Dfd.	5	2¾	6
	Cent. Uruguay	970	27.7.46	37,365	— 1,129	4	142,927	147,027	— 4,100	Ord. Stk.	7½	4	8¼
	Costa Rica	262	Apr., 1946	33,948	+ 5,306	43	286,820	231,946	+ 54,874	Stk.	16½	13	12
	Dorada	70	June, 1946	35,600	+ 1,820	26	186,275	182,375	+ 3,900	1 Mt. Deb.	103	102	102½
	Entre Rios	808	27.7.46	ps.457,600	+ps.33,800	4	ps.1,680,500	ps. 1,722,600	— ps.42,100	Ord. Stk.	7¼	4½	7½
	G.W. of Brazil	1,030	27.7.46	23,700	+ 800	30	833,400	744,300	+ 89,100	Ord. Stk.	30/–	23/6	22/6
	Inter. Ctl. Amer.	794	June, 1946	$802,902	+ $33,920	25	$5,657,516	$4,730,391	+ $927,125	—	—	—	—
	La Guaira	22¾	July, 1946	6,659	+ 298	29	39,698	43,290	— 3,592	5 p.c. Deb.	78	70	60
	Leopoldina	1,918	27.7.46	60,276	+ 274	30	1,684,375	1,451,840	+ 232,535	Ord. Stk.	4¼	3¼	3¼
	Mexican	483	31.5.46	ps.1,464,000	+ps.459,100	21	ps.18,661,800	ps.13,441,600	+ ps.5,220,200	Ord. Stk.	¼	¼	¼
	Midland Uruguay	319	June, 1946	19,346	— 2,137	52	223,623	217,535	+ 6,088	—	—	—	—
	Nitrate	382	31.7.46	8,744	+ 684	30	128,031	103,976	+ 24,055	Ord. Sh.	75/6	67/6	83/9
	N.W. of Uruguay	113	June, 1946	5,098	+ 350	52	66,462	67,138	— 676	—	—	—	—
	Paraguay Cent.	274	26.7.46	£59,425	— £3,156	4	£228,044	£254,069	— £26,025	Pr.Li.Stk.	79⅞	77	73½
	Peru Corp.	1,059	July, 1946	150,902	+ 16,152	4	150,902	134,750	+ 16,152	Pref.	10⅜	7⅛	15½
	Salvador	100	May, 1946	c 123,750	+ c 11,750	44	c1,517,450	c 1,420,000	+ c 97,450	—	—	—	—
	San Paulo	153½	—	—	—	—	—	—	—	Ord. Stk.	60¼	50½	51½
	Taltal	156	June, 1946	4,025	+ 230	52	41,020	35,700	+ 5,320	Ord. Sh.	17/–	10/6	18/9
	United of Havana	1,301	27.7.46	53,537	+ 468	4	216,597	188,799	+ 27,798	Ord. Stk.	3	1	1¼
	Uruguay Northern	73	June, 1946	1,229	— 249	52	20,651	19,583	+ 1,068	—	—	—	—
Canada	Canadian National	23,569	June, 1946	7,900,750	—2,013,500	26	46,539,250	53,467,250	— 6,928,000	—	—	—	—
	Canadian Pacific	17,037	31.7.46	2,079,750	— 400,500	30	40,877,250	45,926,500	— 5,049,250	Ord. Stk.	24	14⅜	22½
Various	Barsi Light†	202	May, 1946	21,465	+ 90	9	54,465	48,562	+ 5,903	Ord. Stk.	131	123	114
	Beira	204	May, 1946	88,294	+ 11,733	32	597,258	613,138	— 16,060	—	—	—	—
	Egyptian Delta	607	23.7.46	16,292	+ 1,445	16	115,171	115,256	— 85	Prf. Sh.	10	8½	5
	Manila	—	—	—	—	—	—	—	—	B. Deb.	71	55½	69
	Mid. of W. Australia	277	May, 1946	20,041	+ 2,552	47	192,189	207,237	— 15,048	Inc. Deb.	97½	85	75
	Nigeria	1,900	May, 1946	326,207	+ 48,577	8	679,107	563,561	+ 115,546	—	—	—	—
	Rhodesia	2,445	May, 1946	548,881	+ 52,104	32	4,066,788	3,988,192	+ 78,596	—	—	—	—
	South African	13,301	15.6.46	1,085,901	+ 64,003	11	11,732,904	10,590,070	+ 1,142,834	—	—	—	—
	Victoria	4,774	Apr., 1946	1,180,202	— 105,122	—	—	—	—	—	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee.